Contents for October, 1916

ILLUSTRATIONS

Autumn-Sweets	*Gerhard Sisters*	Cover
Tender Thoughts	*E. E. Doty*	156
Portrait of Dr. S.	*T. W. Kilmer*	158
Portrait of Dr. M.	*T. W. Kilmer*	158
Common Types of Lightings	*T. W. Kilmer*	161, 162
Portrait-Study	*T. W. Kilmer*	164
Portrait of Miss A.	*T. W. Kilmer*	164
Autumn in the Boston Public Garden	*Vincent Driscoll*	166
American Trees	*H. L. Gleason*	168
The Respective Environment of American Trees	*H. L. Gleason*	171
Pictorial Uses of Trees	*H. L. Gleason*	173
The Aquaplane Girl	*Paul M. Elder*	174
View in Sieur de Monts National Park	*George R. King*	175
Autumn-Sweets	*Gerhard Sisters*	177
New York from the East River	*Joseph Maerz*	178
The Wounded Hawk — First Prize, Nature-Study Subjects	*Wesley Heebner*	180
The Nectar-Gatherer — Second Prize, Nature-Study Subjects	*William S. Davis*	183
The Frog — Third Prize, Nature-Study Subjects	*Lawrence Baker*	184
Nature's Jewels — Honorable Mention, Nature-Study Subjects	*J. H. Field*	186
Resting — Honorable Mention, Nature-Study Subjects	*W. Stelcik*	187
Breakers — First Prize, Beginners' Contest	*W. T. Starr*	191
Hard Sledding — Second Prize, Beginners' Contest	*William J. Wilson*	192
A Woodland Path — Third Prize, Beginners' Contest	*A. S. Upton*	193

ARTICLES

Photographic Portraiture	*T. W. Kilmer*	157
Values	*Paul Lewis Anderson*	163
The Magic Masks (Concluded)	*Milton M. Bitter*	165
Trees in Composition	*H. L. Gleason*	169
Mistakes in Tank-Development and Their Avoidance		170
A Measure for Depth of Focus	*George S. Pfeiffer*	175
Further Comment of an Amateur	*Harold N. Loeb*	176

To Contributors: Contributions relating to photography in any and all of its branches are solicited and will receive our most careful consideration. While not accepting responsibility for unrequested manuscripts, we will endeavor to return them, if not available, provided return-postage is enclosed. Authors are recommended to retain copies.

To Subscribers: A reminder of expiration will be sent separately at the time the last magazine of every subscription is mailed. Prompt renewal will ensure the uninterrupted receipt of the magazine for the following year. Send both old and new addresses when requesting a change.

To Advertisers: Advertising-rates on application. Forms close on the 5th of the preceding month.

Published Monthly, on the 20th, by Wilfred A. French, 383 Boylston Street, Boston, Mass., U. S. A.

Entered as Second-Class Matter at the Post-Office, Boston, under the act of March 3, 1879.

Copyright, 1916, by Wilfred A. French. All rights reserved.

Yearly Subscription-Rates: United States and Mexico, $1.50 postpaid; single copy, 15 cents. Canadian subscription, $1.85 postpaid; single copy, 20 cents. Foreign subscription, $2.25 postpaid; single copy, 1 shilling.

Agents for Great Britain, Houghtons, Ltd., 88-89 High Holborn, London, W.C., England, with whom subscriptions may be placed.

Photo-Era, The American Journal of Photography

WILFRED A. FRENCH, Ph.D., Editor and Publisher

PHIL M. RILEY, Associate Editor **KATHERINE BINGHAM, Editor, The Round Robin Guild**

383 Boylston Street, Boston, Mass., U. S. A. **Cable Address, "Photoera"**

XUM

Copyright, 1916, E. E. Doty

TENDER THOUGHTS
E. E. DOTY
P. A. OF A. SALON

PHOTO-ERA

The American Journal of Photography

Copyright, 1916, by Wilfred A. French

Vol. XXXVII **OCTOBER, 1916** **No. 4**

Photographic Portraiture

T. W. KILMER

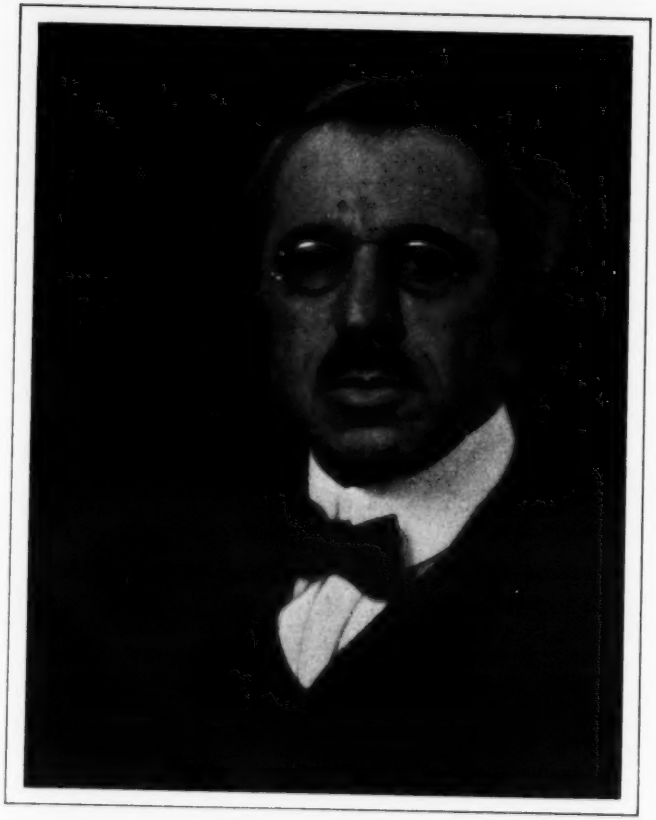
IF one reads all the existing literature which is printed regarding this subject, he will probably arrive at either one of two conclusions: first, that a vast number of photographic artists really believe that they can make portraits and yet cannot do so at all; or, that a chosen few are really able to *make* photographic portraits of people, yet are totally unable to tell any one else exactly how they do it. What is a satisfactory definition of a portrait by photography? To my mind, a photographic portrait is an arrangement of monochromatic highlights, halftones and shadows permanently projected upon a plane surface, and more or less conforming to the accepted rules of art, but having, first of all, the predominant feature of perfect resemblance to the sitter. I wish to dwell upon this necessity of a perfect resemblance if one wishes to make a successful portrait. Personally, if I were going to have my portrait made by a photographer, I should insist, first of all, that it resemble me; it must look like me; it must take the place of me when I am away; it must be so much *like* me, that every one who knows me, especially my nearest friends, will remark on seeing it, "Well, that 's Kilmer, all right." I would care not one whit if the shadow-side of the face was a little too deep in shadow, or whether the tip of the off-side ear presented itself or not; nor would it disturb the calmness of my inmost soul to notice that the nasal-shadow was thirty or forty-five degrees. Of course, these are all little niceties which many critics appreciate; but let me tell you that each year thousands of 8 x 10 negatives are sold as scrap-glass, which would have been successful portraits had it not been for the fact that the photographic artist, all too eager to incorporate the rules of art in his masterpiece, utterly failed to bring out the all-important feature — that of making the portrait *look like* the sitter. Many a surgeon's wound looks beautiful, the stitches hold, and the operation *per se* is a great success, but the patient *dies*.

Do not make the mistake of trying to copy or imitate so-and-so's method of working. Get certain facts fixed in your brain (not your notebook) and, armed with these few fundamental truths, go to it and juggle them around, kaleidoscopically at first, but finally you will discover what you thought you knew, and will be credited by your *confreres* as at least being genuine and original. "Be genuine, even though in so doing you are a genuine damned fool." (I read that phrase in PHOTO-ERA many years ago, yet it is good advice to-day.)

What, then, are the necessaries with which to make successful, representative and life-like portraits by the use of camera, lens, light-sensitive surfaces, chemicals and light? I may be taken to task for going into details; but I assure you that it is the lack of attention to details which makes an otherwise instructive paper fall far short. One often hears it said that it matters little what kind of camera, lens, etc., one uses in portraiture; for cannot a good workman work with any kind of tools? This is absolutely false when it comes to making photographic portraits, as the correct choice of camera and lens is all important. Do not make the error of choosing too small a camera. Successful portraits at times are made with a 5 x 7 or even a 4 x 5 camera and short-focus lens; but after all has been said and done, the best work is accomplished with a camera not smaller than 8 x 10. An 8 x 10 is convenient in size, especially for so-called home-portraiture (frequently erroneously named, being neither "home" nor "portraiture").

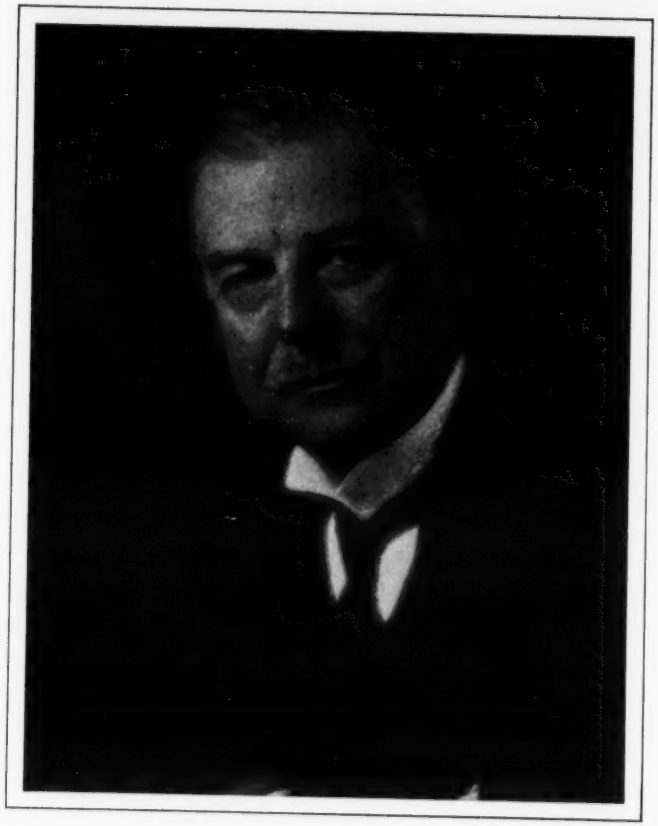
Accidents happen to all of us, and perhaps somebody has obtained a good, life-like portrait of a sitter by the use of a small camera and short-focus lens; nevertheless, a small camera is not consistent with good, non-distorted portrait-work. Personally, I prefer an 11 x 14 view-camera having a forty-inch draw, a large front-

XUM



PORTRAIT OF DR. S.

T. W. KILMER



PORTRAIT OF DR. M.

board, and an extra back, adapted to the use of 8 x 10 holders. Nothing will destroy all your religion learned in early childhood more than fussing in a darkroom with 8 x 10 kits for a 11 x 14 holder; get an 8 x 10 back for your 11 x 14 camera and thereby avoid using "damitol" in developing.

Then comes the proposition as to the choice of a lens. The choice of a lens is just about as hard a question for another to decide for you as is the choice of a wife. Would an anastigmatic brunette or a soft-focus blonde suit your fancy better? How should any one else know better than yourself? Many of our foremost photographic portrait-makers use an anastigmat, whereas just as many other shining lights in portraiture by photography employ a lens that gives diffusion. Personally, I have no use whatever for a portrait which is hard, wiry, and which has the appearance of Washington's engraving on a twenty-dollar bill. What is the use of presenting a human being with a picture of himself, representing him in a manner in which his best friend and closest relative never saw him?

When you look at your father, mother, wife or child, you do not see every hair of their head, eyelash or wrinkle as a hard-drawn entity. Not at all. Nature understood her business when she gave us soft-focus organs of sight to behold all the beauty of this glorious world. When you see a member of your family, you behold him or her as a familiar form having certain well-known characteristics of shape, color, light and shade. I saw, but a few days ago, an exquisite set of sixteen 8 x 10 negatives of a woman, taken by one of our foremost portraitists, yet not one of these sixteen prints suited the sitter, because they all showed her *large mouth*. How could they help showing it? She *had* it, and had probably looked in her mirror thousands of times, yet never until that day had this personal characteristic been so plainly and anastigmatically pointed out to her. Through her soft-focus eyes, and the soft-focus eyes of her family, that large mouth had never been accentuated nor looked upon as a *mouth*, but simply more or less of a hazy attribute which was one of many points that went into the composition of her face. If you must use an anastigmat for portraiture, I beg of you to employ some method of diffusion in printing to soften down the otherwise inevitable hard lines of the picture. Should we decide then to use either a corrected or uncorrected lens in our work, of what focal length must it be to give us the best that is in it for portraiture? This is a point where many an able, artistic and proficient photographer fails utterly. From close observation of my own past work, and also the work of others, I will say unhesitatingly that most so-called portrait-work is replete with distortion. Take a collection of ten portraits picked up anywhere, at random, and study them critically as to distortion; you will find very few of them that stand the test.

An eighteen-inch lens for an 8 x 10 camera: no shorter length is consistent with good portrait-work. Look at many portraits of women, particularly bust-portraits, and see the near shoulder loom up nearly twice the size of the far shoulder. Gaze at the hands of many sitters, artistically posed, yet about twice again as large as they are in nature. *Regardez, s'il vous plaît*, many of the head-portraits of people, and notice well those bulbous noses which have almost the semblance of a sprouting potato; the ear in profile, appearing as a large Blue Point oyster-shell, while chins, cheeks and lower jaws seem to vie with one another for a point of vantage, and fairly howl out their distorted prominence to the critical observer. Yes, I fully realize that many photographers, even some of nation-wide repute, "get away" with it, selling these "distortos" at fabulous prices per dozen. Nevertheless, this fact does not make it right that these things should be. Use a lens of sufficient focal length and get far enough away from your sitter to produce correct perspective in portrait-work; you will be better satisfied and so will your sitters and your critics.

A lens-hood is very essential for good results; you may use the various types of hoods on the market or use simply a wire-frame with a piece of black cloth thrown over it.

The best type of shutter for portrait-work is one which is concealed and which makes as little noise as possible. The studio-shutter furnished with many lenses (especially the soft-focus variety) is an excellent one. The silent shutter, consisting of two thin leaves or doors, and placed back of the lens, is really the ideal one for portrait-work.

The use of a special make of plates or films is a matter of individual choice. To say which is the best plate or film is a very hard matter. All plates are good and all films are good. Glass plates have a way of breaking; they are heavy, and at certain times show a slight amount of halation even when backed. The disagreeable feature, to me, of backed plates is the messy business of removing the backing and the staining of the developer. The disagreeable feature, to me, of film-sheets is the fact that they have to be pinned up by one corner to dry, and also that each side, being gelatine-coated, is subject to abrasion. Personally, I use a cheap brand of plate, and the results obtained therewith are good enough not only to satisfy myself, but many others who see the prints made from these plate-negatives.

Whatever make of plate or film you do use, I beg of you to stick to that one alone and use the developer suggested by the makers of that plate or film. Panchromatic plates and a two-time filter (yellow) will produce excellent results, provided that your sitter will keep still for the added exposure necessitated by the use of the yellow screen. Personally, I have ruined many plates trying to accomplish the above result, as the sitter moved in over one-half of my exposures, unless taken out of doors in a good light. Professional models and a few people have the necessary control to enable one to use panchromatic plates and a two-time screen in studio-work.

Tray- or tank-developed? That is a question which we must decide for ourselves. Many like tray-work, and just as many are advocates of the tank. To me, the combination of the metal frame-holders for plates or films, and the hard-rubber tank is very appealing. By the use of these frames the plate is developed, fixed, washed and dried without touching it at all, your fingers are kept clean of developer, while at any moment you may examine the plate to your heart's content, in its safe place in the frame. Scratching becomes almost an impossibility. For the handling of 8 x 10 plates, this method seems a real necessity.

I shall say nothing about developers, as I believe in using the developer suggested by the manufacturer of the plate or film used.

As to illumination in photographic portraiture, there is a great diversity of opinion. Every one has a perfect right to his own opinion, but of course the opinion of a person who has worked for a long time using this or that form of illuminant must be respected. I have used and seen used in portraiture about all types of illumination, from the filtered rays of the sun at midday to the soft, yellow rays of the incandescent gas-burner. The question of illumination resolves itself into the proposition of, first, the best sort of illumination for photographic portraiture is one which is absolutely constant and also of high actinic value. Second, what are your sources for obtaining the above? Many of the leading portraitists of our country are not depending upon daylight at all. Daylight is fickle from day to day, hour to hour and minute to minute; many a time your lighting will be perfect, you will start to expose, when bang goes a cloud across old Sol, and your scheme of lighting is defeated. I am done with daylight for an illuminant when I can obtain electric light, especially the mercury-vapor light. I am absolutely convinced that this is the light *par excellence* for photographic portraiture. First of all, it is an even, steady light. It is constant. It does not radiate heat as much as do other forms of electrical illuminants. It is not hard on the eyes of either sitter or operator, the former being able to gaze directly at it without squinting. It is monochromatic. To me, this is one of its greatest advantages, as the sitter loses all color, becoming just a study in monochrome, with highlights, halftones and shadows all perfectly perceptible to the operator's eye.

In using daylight or artificial light, remember that a diffuser is necessary to good portraiture. Personally, I use a square wire-frame about four by four feet. This square is again subdivided by two wires into four equal, smaller squares. These smaller squares are covered with black lawn, the first square having one thickness, the second, two thicknesses, the third, three thicknesses and the fourth, four thicknesses of this black material (Fig. 1). This square diffuser may be held in the hand during the exposure, or may be fastened in the clutch of an ordinary old headrest-stand. Delightful lightings may be obtained by the judicious maneuvering of this screen. Another adjunct in the way of diffusers, which I employ, is the following: a frame of light wood or wire is constructed, oblong in shape, about three feet wide and five feet long. This frame is covered with black lawn, and a hole about six inches in circumference is cut out of one end of this oblong. A screen-door handle is fastened to one side of this frame (Fig. 2). By a circular motion of the frame during exposure, you are able to accentuate certain portions of the face in the same manner as one would vignette in printing. Headrests are mentioned merely to be condemned, as I never use one of any sort.

As to backgrounds: the plainer the background, the better. Personally, I use a three-fold screen seven feet high, the central panel of which is about five feet wide, the two end or side panels being about three feet wide (Fig. 3). One side of this screen is covered with dark green or brown grass-cloth or canvas, while the opposite side is covered with light gray, same material. Thus we have a single background giving us the choice of two tones — light and dark. The side panels of this screen may be turned so as to augment or cut down the source of light, and, when using daylight, act as reflectors. When using artificial light, you will get better results if you employ a smaller, supplementary lamp on the shaded side of the sitter instead of a reflector. The various lightings one may obtain with artificial light are many and varied.

Let us try to show, by the use of a few illustrations, the most common types of lightings. For this purpose I put into use a small plaster-cast, and under each illustration I have drawn a

XUM

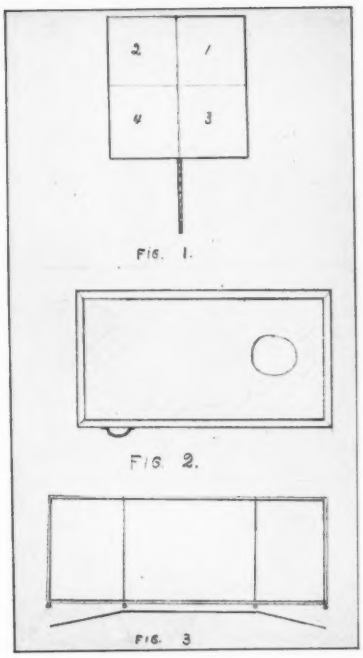


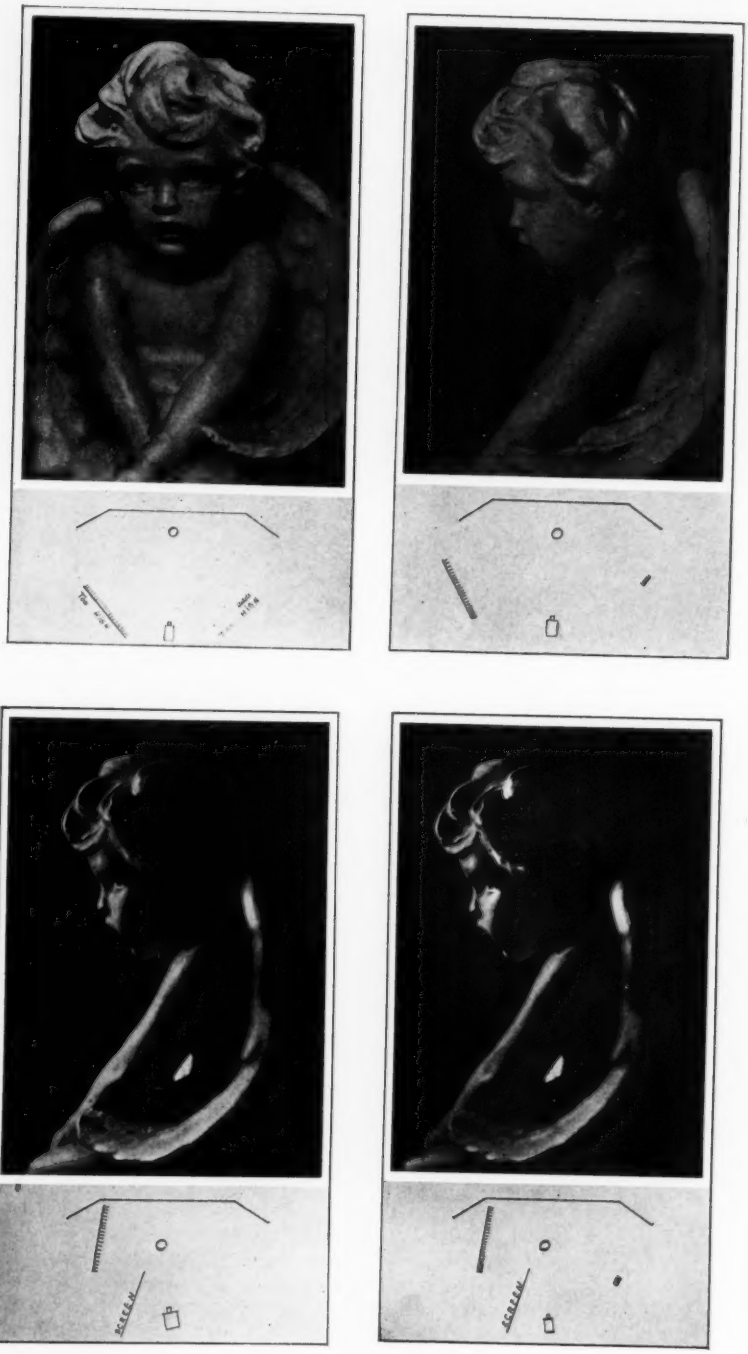
FIG. 1.

FIG. 2.

FIG. 3

COMMON TYPES OF LIGHTINGS

T. W. KILMER



COMMON TYPES OF LIGHTINGS

T. W. KILMER

diagram showing the position of sitter, camera, light, background and reflector. For photographic portraiture, the side-lighting, or what is known as ordinary "studio" lighting, is the one usually employed. This, however, may be modified by the use of diffusers and screens, so that with a little practice the best lighting for any individual face will suggest itself upon seeing the sitter. A rugged type of face will stand greater contrast in lighting than will a boyish or feminine cast of countenance. Do not have your source of light too high above the head of the sitter, as this tends to give the eyes a dark, sunken appearance. Remember to have your source of light far enough in front of the sitter to light up the face well, throwing the shadow of the nose about forty-five degrees down onto the shadow side of the cheek. Try to train your eyes to appreciate the various lightings upon the sitter when looking at him direct. Do not depend too much upon the image on the ground-glass, as it is often deceptive. Pinholes and blemishes in the negatives will need retouching; otherwise, retouching is an abomination. If you use a soft-focus lens, retouching can usually be dispensed with. The choice of printing-medium is best left to the individual taste of the artist. Personally, I use Artura paper, grade E. Rough, for all of my portrait-work.

The painter demands many sittings before he produces the finished product of his labors; and why should the photographic artist be expected to have a perfect stranger walk in on him, and produce a lifelike portrait by photography of that sitter, whom he has never seen before? It is not reasonable. I will not try to produce a photographic portrait in one sitting. I must see the sitter several times, know him better, see him in his various moods, become familiar with many of his little idiosyncrasies, before I can try to make a portrait that looks like him. In this connection, I am reminded of a little incident which illustrates this point. One of our foremost photographic artists in portraiture was suddenly confronted one afternoon by a man of not only national but of international prominence, who walked into his studio and said that he had come to have his portrait made. The artist frankly told him that he was in no mood to make a portrait of him that day, but if he would call again next Wednesday he would see what could be done. The sitter argued that he had important dates the entire time for the next three weeks. The artist advised him to break a few engagements and treat his sitting for a photographic portrait the same as he would were it to be an oil-painting of himself. This all-important person saw the philosophy of the artist's words, called as requested the next Wednesday, when a photographic portrait was made which has startled the world as to likeness. Here is one great artist who knew his business, and here is one great ex-president of the United States who has a portrait of himself the like of which has never been equaled.

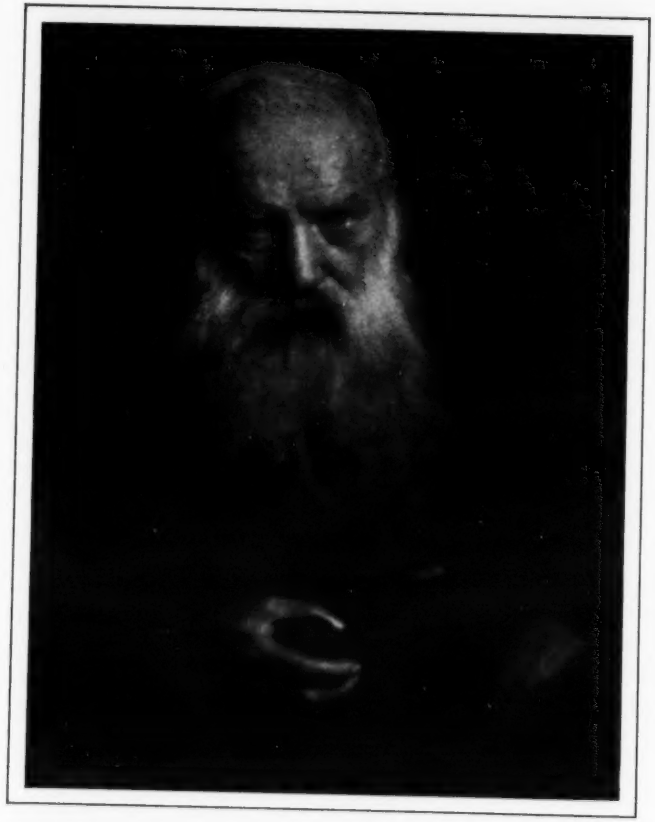
There is nothing which is more profitable than photographic portraiture done in a correct, up-to-date and business-like manner; and also there is nothing so entrancing and delightful as a hobby to the amateur as that art of making lasting and lifelike portraits of family and friends.

Values

PAUL LEWIS ANDERSON

THE question of values is one of the most abstruse which the artist has to encounter, and is of special importance to the photographer, whose work, lacking the element of color, depends for its effect largely on relative values. Line, of course, is important, as it must be to any worker in monochrome; but the technical methods employed by the photographer inherently are capable of rendering the values of nature more perfectly than any other medium, and the photographer has the power to modify them — even without manual intervention — to as great an extent as the worker in any other process. The objective side of the subject is learned easily, for, given a panchromatic plate as well as the ordinary and orthochromatic types, a visual luminosity-filter and a set of contrast-filters, together with an actinometer and some knowledge of the effects of under- and overexposure and under- and overdevelopment, the photographer is equipped to render the relative values of the subject correctly, to compress or extend the scale, or to emphasize any particular color at will. This, however, is the least part of the matter, for the subjective effect of values is of the greatest importance, and some photographers with little technical knowledge have become noted for their treatment of values, simply by reason of their appreciation of the more abstract qualities, whereas the finest technician can never produce anything of artistic value if he goes no farther than this knowledge.

"PICTORIAL LANDSCAPE-PHOTOGRAPHY."



PORTRAIT-STUDY

T. W. KILMER

PORTRAIT OF MISS A.

The Magic Masks

MILTON M. BITTER

(*Concluded*)

HAVING made our masks, let us take our cameras upstairs into the second- or third-story front room, where we can work in comfort. For our first test let us choose a day with bright sun and no clouds to cause changing light-conditions, for this test will be for our shutter-speeds, and in making it we will probably arrive at another conclusion quite as important, for we will probably get a better idea than we ever had before of what *a correctly exposed negative* looks like. We may find that the $\frac{1}{10}$ second gives a better negative than the $\frac{1}{25}$ that we have been accustomed to give with the same stop under the same light-conditions. Or it may be possible that, with a faster plate, we will find that $\frac{1}{50}$ will give more satisfactory results than we have been getting with $\frac{1}{25}$, and we will regret that we did n't use F/22 instead of F/16 in photographing that row of houses last Saturday for the real-estate man.

Are we ready? Open the window. Let up the camera. Point down the street. Let the view to be photographed be about 100 feet distant. Take in a bit of a tree, a house with part in shadow, where detail is wanted (a porch, for instance), and about *one-third of image to be open sky.*

Insert mask AAAA in camera horizontally, with the opening in the lower, right-hand corner and the *number 1 in upper, right-hand corner.* Drop your lens-board as low as it will go and move it to the left (standing in front) so that the lens is *directly opposite* that part of the plate to be exposed. Focus, and take particular note of the position of the image on the ground-glass so that you can make all pictures uniform. Move one leg of the camera so that the principal lines of the image appear as nearly rectilinear on the ground-glass as possible, *regardless of whether the camera is level or not,* for in this test we wish to avoid the use of the swing bed or swing back. We wish to use only the *central* rays of the lens in its position *directly opposite* that portion of the negative being exposed.

Having your image in position, and the proper focus, stop down to the smallest diaphragm-opening with which you believe you can get *full exposure at* $\frac{1}{25}$ *of a second.*

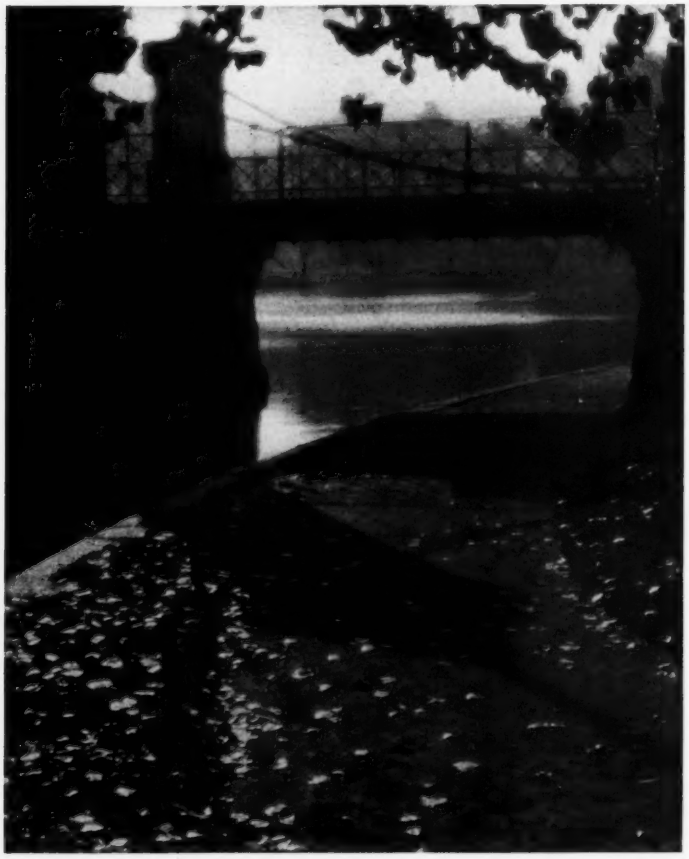
HAVING SET THE STOP, DON'T CHANGE IT ONE BIT THROUGHOUT THE ENTIRE SIX EXPOSURES. In fact, it will be well to wedge your stop indicator with a wad of paper, so that you will not move it accidentally in changing the position of your lens. Now insert your plateholder *back of the mask,* making sure that the safety ridge is in its groove (rabbet) on the back of the camera. Set your shutter at $\frac{1}{100}$. Draw your slide. Expose. Insert slide. Take out plateholder and the mask AAAA, and insert mask BBBB (making sure that it does not cover the rabbet), with 2 in upper, right-hand corner. Set your shutter at TIME. Open the shutter, but *let the lens-opening (stop) remain as when* making the previous exposure. Step to the front of the camera and *slide* lens to the center, directly opposite the opening in the mask. You will then find that to get the image in the No. 2 space you will have to turn your camera *on the tripod-head* slightly to the right. Having located the image properly, close your lens, set shutter at $\frac{1}{50}$ and proceed as before.

To expose for No. 3 opening, insert the third mask, CCCC, with figure 3 in upper, right-hand corner, slide the lens to the right (working from the front) until it is opposite the opening. Turn camera slightly to the right, on tripod-head, locate image, set shutter at $\frac{1}{25}$ and proceed as before.

To expose for No. 4, slide the lens all the way across to the left into its original position, then raise it as high as it will go, or until it is directly opposite the opening for No. 4 exposure. Insert mask for No. 4 exposure, AAAA, with opening in upper, right-hand corner, and with figure 4 in upper, right-hand corner. Then move one of the tripod-legs and turn the camera, on the tripod-head, until the main lines of the image appear rectilinear in the upper space on the ground-glass, regardless of whether the camera is level or not.

Proceed as before, giving $\frac{1}{10}$ second exposure for No. 4, $\frac{1}{2}$ second for No. 5 and the quickest possible bulb for No. 6, sliding the lens to the right (working from the front) for each successive exposure.

Now develop your plate. The tank-method is best for this test. Do *not* use an ultra-rapid plate. If you use a tray, determine in advance the time and temperature that you will use, or develop for the $\frac{1}{25}$ second exposure, which you will find on your plate in the *upper, left-hand corner* when the image is developing right-side up, sky at the top. The reason for developing for this image is, you will remember, that we figured that $\frac{1}{25}$ would be the correct exposure for the subject.



AUTUMN IN THE BOSTON PUBLIC GARDEN VINCENT DRISCOLL

It may be interesting to you to make note of the time of the first appearance of the highlights in each of the six images and thus convince yourself of the riskiness of the factorial system of development, except within the limits of approximately correct exposures; for you will probably find that had you used your factor on the quick bulb-exposure you would have an underdeveloped, flat image, whereas the same factor for your $\frac{1}{100}$ second would have produced a harsh one. But by using the time and temperature method (a developer of a certain strength, used for a fixed time at a certain temperature, regardless of exposure) you would have had six negatives which, though varying much in density and printing-time, would have yielded almost identical prints with proper printing. At any rate, the negatives would be more susceptible to after-treatment. If your quick bulb-exposure, for instance, had not been as quick as you intended it to be, and your plate was *considerably overexposed*, what kind of a negative do you think you would get with the factorial system so often advocated?

After *thorough* fixing and washing, when you are ready to judge results, *don't attempt to judge from the negative.* Make a proof on Solio or other printing-out paper. Print until you get a correctly printed image of the $\frac{1}{25}$-second exposure. Then examine the proof in subdued light and the *relative* depth of color of the six images will tell you whether your shutter-speeds are *comparatively* correct. Note this word *comparatively*, please; for, of course, this test will not assure you that your $\frac{1}{25}$ *is* $\frac{1}{25}$, but it will give you a fair idea as to whether your $\frac{1}{25}$ is *twice as much* as

your $\frac{1}{50}$, etc., and this information will be worth a whole lot to you. In examining your proof, note particularly the sky-tints and the color of the cast shadows.

It would be well to make a permanent *print* from your negative with full record of exposures, stop, time of day, light, meter-reading, developer, time of development, etc. Mount the six little pictures all in a row.

I would impress upon you the need to make *detailed records* of each step in all your experiments with the Magic Masks. *Don't trust to your memory.*

I think that the most valuable use that can be made of this first negative is in helping you to determine *which exposure was correct* for the printing-process you are accustomed to use. Of all photographic problems, that of exposure is the most important. For gaslight-papers a softer, thinner negative can be used than would be best for carbon-printing, for instance, which is a long-scale process, and for average subjects requires negatives of more vigor unless you are working for very soft, pictorial effects.

If there was a slight breeze (fortunately) when you made your exposures you can judge, from the tree in your image No. 4 ($\frac{1}{10}$ second), whether you could "freeze it" (stop motion) at $\frac{1}{10}$ second at 100 feet. This, too, will be valuable information for you, for if you are working for pictorial quality in your view-work and find, upon occasion, that $\frac{1}{25}$ at F/11 is the indicated exposure, give $\frac{1}{10}$ second (if far enough away to stop motion) and a *short development* and note the beautifully graded softness you get.

Before laying aside your first test-negative, I would suggest that you *print each image separately,* and you will probably find that from at least four of them you can get virtually identical prints, using, if necessary, different grades of the same brand of paper, assuming that you are using gaslight-paper.

A few suggestions as to testing various times of development may not be amiss.

For this test make six *uniform* exposures at the time you believe to be correct — say $\frac{1}{25}$ second. Provide yourself with six wooden clothes-pins or film-clips, numbered from one to six. Also make a pencil-chart, of the size of your plate, having lines on it showing where you are to cut the plates. Take the glass-cutter and a heavy ruler into the darkroom and lay the plate, emulsion-side down, on a double piece of cheese-cloth placed on a level, hard surface. Then, laying the chart alongside of the negative as a guide, cut the negative into six parts. In cutting, give *a firm pressure* with the cutter, so that the edges will break clean. In breaking the negative, do not touch the emulsion with your bare hands. Use soft, white gloves or a soft handkerchief. Lay the six little negatives in the tray, and put the numbered clothes-pins or clips on the edges of the tray — three on a side. Pour on the developer. Exactly at the expiration of a predetermined time, say four minutes, take out one negative, rinse it well, lay it in the hypo-tray and take pin No. 1 and fasten on the side of tray adjoining the plate. At the end of four and a half minutes transfer No. 2 negative and its pin. After five minutes transfer No. 3, etc.

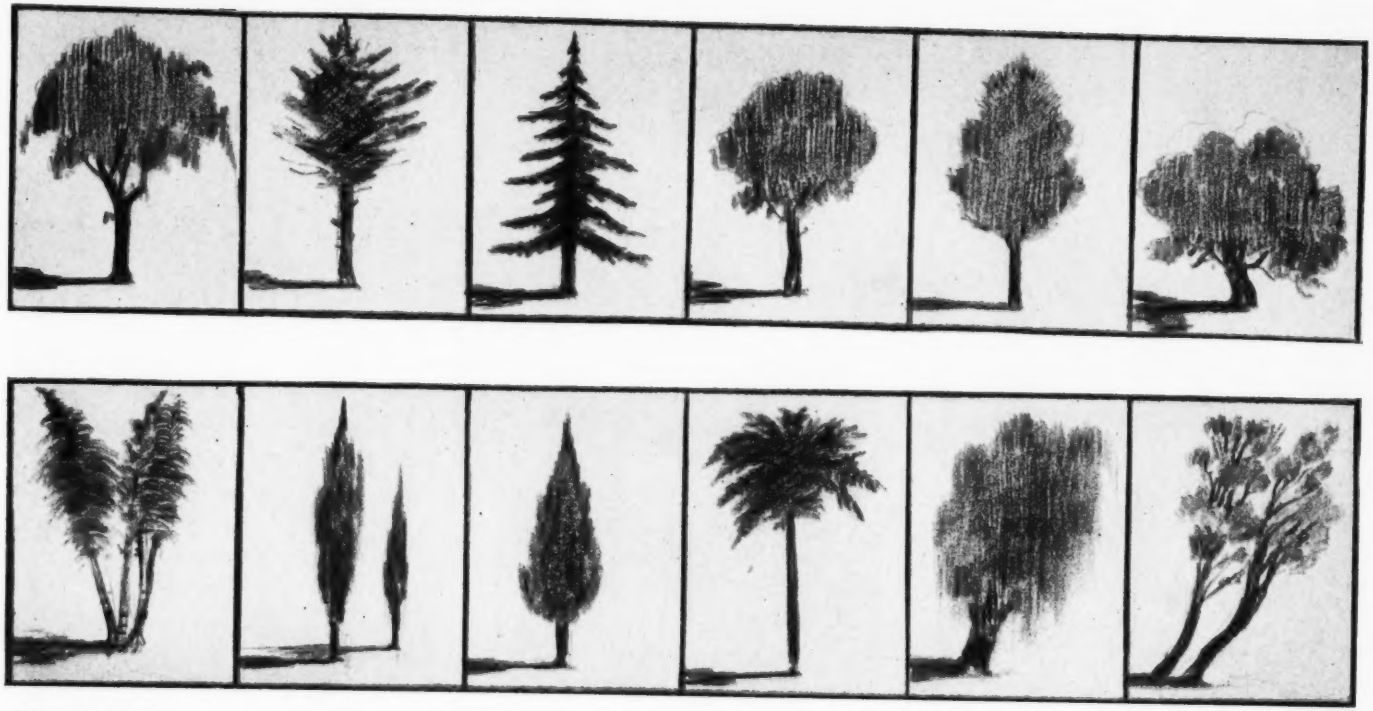
After fixing, transfer negatives *and pins* to a washing-tray and wash with ten or twelve changes of water, allowing three or four minutes between each washing. Before setting up the negatives to dry, remove all excess water by swabbing fronts and backs with a wad of moistened absorbent cotton or pressing lightly with a soft lintless cloth. Maintain the numbered order of the negatives when drying, and, before making prints, number each one with India ink, so that they can't get mixed.

To remove each plate from the developer, *promptly* at the predetermined time have one finger under a corner of the plate ready to lift it, for it is n't always easy to lift these little fellows out of the solution without considerable fumbling.

Your own ingenuity will provide means for making the various other tests mentioned in the first part of this article.

A final word of caution. Don't think that by cutting holes in plateholder-slides you can use *them* for masks in connection with a regular slide. If your plateholder has a flexible valve, you can get your slide-mask *into* the holder, but can't get it *out* without difficulty, for the valve will rise up into the opening and catch. If your holder is of the old type, when you put in and pull out the slide with a hole in it, light is likely to stream in on the end exposures on the plate as the opening passes over the valve.

Advanced readers of PHOTO-ERA may think that these articles have been burdened unnecessarily with details; but I ask your indulgence for the sake of those beginners that hope to become "advanced" workers some day and realize, as I have so often done, the lack of *definite* instructions on labels, in instruction-sheets that accompany apparatus or materials, and in textbooks and articles on photographic subjects. At the risk of boring some, but in keeping with the editor's wish, I have endeavored to make the articles PRACTICALLY HELPFUL, knowing that for him that makes use of the Magic Masks they will lead to *exact knowledge* by the shortest route, in the quickest time and at a great saving of energy and materials.



AMERICAN TREES

H. L. GLEASON

Trees in Composition

Their Beauty and Decoration in Photography

H. L. GLEASON

MANY photographers, especially beginners, photograph trees because they happen to be in the scope of the lens. There are those who do not appreciate the value of trees, and some who do not think them altogether beautiful; and, sure enough, they are not, when photographed by some. But trees are the true decoration of a picture.

The great painters, who did not use the camera, have demonstrated this by the prominence given the trees in their pictures. They might have "recorded" many more subjects, but the camera was not available. Let us look to Constable and Corot. How much they depended, when painting a landscape, upon the trees for decoration. Constable, for instance, often used trees to frame a beautiful vista. And in his composition very often he placed one group of trees near the observer and the other group in the distance, thereby breaking up a symmetrical effect which might have been very annoying.

No man ever loved trees more than Jean Baptiste Corot. If a few others have painted like him, it is because they possessed souls which made it possible for them to interpret nature somewhat as he did. He knew the value of trees in a picture. Not only did he find trees invaluable as an outer portion of the picture and as a means to decorate the vista, but he thought so much of their picturesqueness that he often made them the principal thing in the subject. In some of his pictures the sky and mountains, the cows and the river, are all accessory, and the beautiful, richly colored, feathery trees are brought out very prominently. It will do us no harm to read the words of Sidney Allnut. He says, "Corot is seen at the height of his powers in the 'Souvenir d'Italie.' The thousand subtle nuances of exquisite color in the luminous sky, the refined firm drawing *of the trees*, and the happy confidence revealed by every brush-mark upon the canvas, make it one of the most delightful and, we may say, most lovable of its creator's works."

These men did not follow any fixed rule of composition, but rather followed their natural instincts. You may say, "Ah! but that is different. Corot and Constable and the others were painters, and that which was in them spoke through the hand and told them the right and wrong in composition—but we are not all artists." Very good, that is just the point. Let the writer direct your thought and attention to the sketches on the preceding page. How lacey and feathery, how delicate and caressing, or how bold and full of strength and character a tree may be.

In these sketches are portrayed some of the trees seen in America. Study the beauty and grace of each branch, and then the tree as a whole. They are all trees, but how different. First the elm, with its wide-spreading branches; then the white pine, lifting its arms up towards the sky; the spruce points its arms towards the earth; the walnut comes nearest to being round in shape, whereas the maple is the more symmetrical, well-balanced tree. The apple-tree is the more artistic because of its irregular shape. Notice that the modest birch never grows alone, but rather in schools or family-clusters. The poplar trees are the soldiers, sentinels and pickets, keeping watch for the main army of trees in the distance. The cedars have been called the picture-trees. Maxfield Parrish, to say nothing of many others, delights to use them because of their great possibilities in "breaking up" the set of horizontal lines in nature. The palm is in a realm of its own. How much different the outline is from any of the others. The weeping willow, or, as a little man has called it, "the raining tree," is the sober tree. The white pine and the maple seem to smile and gaily raise their arms as compared with the weeping willows, yet few trees are more decorative. And, finally, the willow itself, which peeks at you around the bend of the road or the river, was grown purposely for artistic photography.

In another sketch depicting the respective environment of these same trees, I have tried to show a few good examples of tree-composition. In each of these instances the tree has been made the principal object, and all else is accessory to it. The big elm commands attention, whereas the farmhouse is the balancing-portion of the view. The white pine is the principal air, as in the musical composition, whereas the trees in the distance are the other parts of the strain. The same applies to the spruce, to the walnut and the others as well.

In the photographs reproduced herewith the big tree in the Boston Public Garden scene stretches out its mighty arms to keep back those who would do harm to the statue of General Washington or to the multitudes of tender

flowers beyond. The big pine tree of the forest defies the cold winter-blast and protects the younger and more delicate trees behind it. The spreading elm in the other Public Garden photograph has a real personality and is the grandmother about whose skirts the fickle human beings cluster and prattle of their troubles or their happiness. The willows are waving their arms to you, asking you gently and politely if you will enter the vista to which they actually point. The two lower photographs bring out the fact that trees are almost as graceful and interesting without the adornment of leaves as with them, and the same principles of composition apply.

Let us talk for a while about composition. Of course, there are no ironclad rules which can be applied definitely; but general rules are used invariably by those who have made it a study, namely, good balance — the placing of the principal and subordinate objects — the high and low horizon, the main lines of the picture, etc. In reference to the principal and subordinate objects, we may refer to composition in music. Suppose the composer played two themes on the piano at once, each one independently of the other, there would be absolute confusion and discord; none the less in your picture this is true. As you seek a good photograph, and two trees present themselves, place the camera in such a position that one of the trees becomes the dominant note and the other subordinate. We have often seen two trees or two groups of objects in one photograph, each clamoring for attention, whereas had the picture been divided there could have been two separate photographs, more pleasing and each one complete.

A word about reflections. It is merely a technical achievement to photograph a mountain rising up above a lake, the reflection of which is as clear and definite as the mountain itself. The mountain in itself is sufficient, allowing the reflection to be subservient unless, perchance, it is a reflection-picture — then the scheme is reversed. Attention may well be directed to the Norwegian painter, Thaulow, who would not hesitate to allow the top of his canvas to sever the quaint old house midway, so that the interest is centered in the swirling river below.

Birge Harrison sums up composition very well, indeed, as follows: "Don't crowd your composition." Let your tree or your mountain have breathing-space. Keep them away from the edge of the frame. They will gain in dignity and apparent bigness by diminishing rather then increasing their proportions.

"Don't put in a single unnecessary feature." Everything which does not contribute to the grace, or the beauty, or the force or the sentiment of your picture detracts from it. But unquestionably the best rule of all is to keep the eyes always wide open and observant of the things about you, for the most beautiful compositions in the world are always daring and unexpected arrangements of nature.

Try not only to get a good "snap" or "time" of a place or scene, but make it a picture. Many good photographs are made by accident, but many photographs are really bad accidents. Of course, when you desire to secure a "snap" of kitty just before she springs for the field-mouse, you cannot always stop for studied composition; but when you photograph landscapes, or the home, or the roadway, or, best of all, the trees, try to do them justice, for they are the landscape-decorations and the natural beauty of the earth itself.

Mistakes in Tank-Development and Their Avoidance

TANK-DEVELOPMENT of photographic dryplates is based on the use of a greatly diluted developer which works with extreme slowness and develops, at one time, a number of plates or films that have been exposed for different lengths of time and under greatly varying conditions of light, equalizing the same better than can be done by hand-development and using more concentrated developers. Tank-development has often been called a universal developing-method, and it has many devotees, especially among amateurs.

Occasionally one finds on negatives developed in a tank light encircling lines on the contours of large dark objects, which are caused by the salts of bromine that form during development being attracted by the parts adjoining their place of formation and there becoming fixed, and affecting unfavorably development in those places. According to Lüppo-Cramer, it is a mere question of diffusion. He says: "As to the cause of this peculiar appearance (of light bands), it is plain that it cannot be attributed to the action of diffusion during development. In those places where the strongest blacking occurs, a relatively

THE RESPECTIVE ENVIRONMENT OF AMERICAN TREES
H. L. GLEASON

large amount of soluble bromide will form, and this diffuses itself in the underlying gelatine coating and prevents the formation of chemical fog there. Since the developing-solution is greatly diluted, the comparatively small amount of bromide salt has a strongly anti-fog influence. In fact, this appearance becomes weaker with increased concentration of the solution, but it almost always shows itself in negatives with very strong contrasts when developed in the tank if the plates are not kept moving up and down." These defective appearances have long been known, and have been explained in several other ways. H. Schmidt discusses the appearance of fog and streaks, and gives, as their causes, the following explanation: First, the plates stand too close to the side of the tank, with the sensitive coating facing towards it. Second, the developer has not been sufficiently mixed. Third, water or ice has been added to it. Fourth, the plates stand so close to one another in the tank that the exhausted developer cannot always replace itself by fresh.

Owing to numerous complaints regarding the formation of streaks on negatives developed in tanks, H. Seemann was induced to make further exact investigations in continuation of earlier work on the subject. These investigations resulted rather unfavorably for tank-development, especially with negatives that later might acquire a scientific value. He had frequently observed that in vertical development, i.e., the plates placed upright in the tank, the upper third of the plates is always noticeably more strongly developed than the lower part, and it has been found that even under quite normal conditions and with close observance of instructions it was impossible to obtain negatives developed evenly and free of streakings. The larger the uniformly lighted surfaces are, and the quieter the developer is allowed to stand in the tank, the greater will be the difference between the upper and lower portions of the plate and the more intense the streakings and markings. Seemann considered that large, uniformly exposed plates could best be developed by the Walter horizontal method, in which the plates are laid exactly horizontal and are allowed to remain without rocking the developer. But even in this method narrow light seams are apt to appear around sharply defined dark fields.

It would thus appear that the faults of tank-development investigated by Seemann occur only when large surfaces of uniformly strong exposure are developed, and he mentions cases where these appearances gave rise to seriously erroneous conclusions, as in photographs of stars and in radiographs, the latter leading to a wrong diagnosis. In the present article, however, we will consider Seemann's discussion more from the standpoint of the practical photographer.

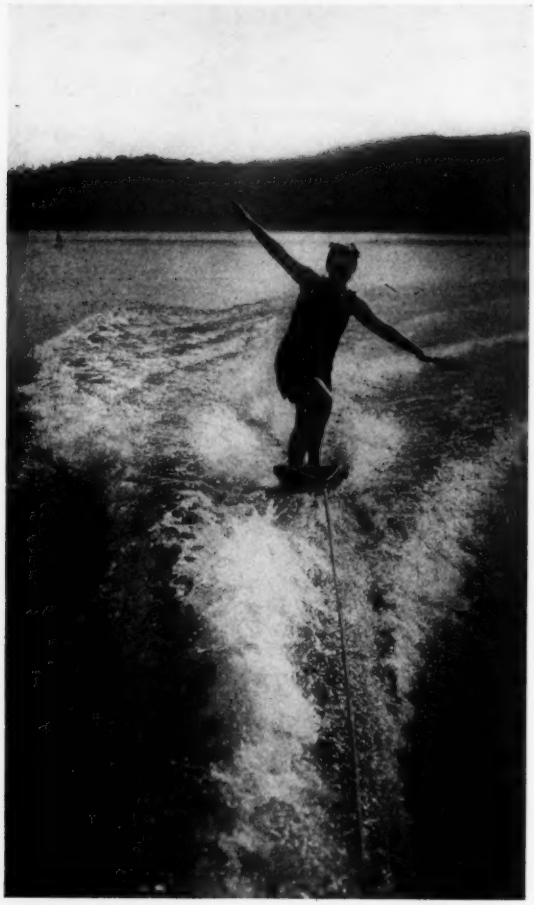
He gives the following explanation of the formation of streaks in tank-development: On entering the gelatine coating, the developer reduces the exposed silver bromide; the resulting products of reduction, according to the density of the reduced bromide, form a more or less dense layer, which becomes diffused back into the developer and, being heavier than the fresh developer, it sinks towards the bottom in a somewhat thick stream along the face of the negative. Along the course of these streams the approach of fresh developer is prevented in a purely mechanical way and the progress of development is hindered. Moreover, the bromide salts that have formed act as a chemical restrainer. The speed of these streams is so great that the diffusion of the reducing salts in the film in contact with them almost entirely ceases. According to Seemann, the streams creep extremely close along the face of the gelatine without appreciably affecting the remainder of the developer. The streaks and fogging observed by him were so sharply defined that he could detect a constant flow of the complex fluid. He came to the conclusion, therefore, that Lüppo-Cramer's statement that the unimportant streak formations observed by the latter arose from diffusion within the gelatine coating was quite improbable, for such diffusion would have to overcome an enormous resistance in comparison with their free flow in the developer.

What, then, do these observations teach the practical photographer? In portrait-pictures, strongly exposed surfaces in slightly exposed surroundings are doubtless rare, and a streaky formation is not to be expected there. In landscapes with strong contrasts, however, such as snow-fields with cloudless sky, or both these factors — if there are snow-surfaces against a uniformly gray-developed sky — or other homogeneous fields, streak-formations will probably be observed. A condition requisite for this formation is that the plate rest quietly against the tank during the whole developing-process. If the plate is moved several times, the streaking is perceptibly weaker, and if it is changed alternately to opposite edges, the trouble is as good as eliminated. Streak-formation can be virtually avoided entirely if the plates, when developing in the tank, are changed at regular intervals to all four edges; or, still better, the tank is placed on all six sides. In doing that, however, the chief advantage of tank-development is lost.

As may be judged from their cause, the defective appearances described are generally

XUM

PICTORIAL USES OF TREES
H. L. GLEASON



THE AQUAPLANE-GIRL PAUL M. ELDER

weaker the smaller the plates. The same writer further observes that in practical photography tank-development should be employed with just as many precautions as are required in ordinary tray-development with plates of uncertain exposure, if the negatives are to meet the highest requirements.

For the practical photographer the satisfaction remains, that the disadvantages ascribed to tank-development occur only to a noticeable and injurious degree in cases of conditions of extreme exposure. With scientific subjects, however, that call for exact values, even tank-development is not devoid of objection. Uniformly exposed large plate-surfaces — after moderate rocking — have shown a maximum difference in blacking of fifty percent, and with the strongest stirring of the developer this difference could not be reduced to less than eighteen percent.

These are things the knowledge of which is really educative. When we figure to ourselves what a powerful influence development, as such, can have on the distribution of the blacking in a negative, we must wonder all the more what the normal negative may produce in spite of this, and what a color-screen offers us. . . . or is it only our eyes that fortunately help us deceptively over such inequalities.— *Das Atelier.*

"A picture is an illusion."—*Birge Harrison.*

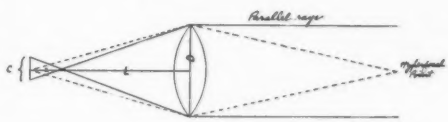
FRENCHMAN'S BAY FROM MT. DESERT NATIONAL PARK — GEORGE R. KING

A Measure for Depth of Focus

GEORGE S. PFEIFFER

AS is well known, there is a point to place a lens at which both near and far objects are rendered with most nearly uniform sharpness, which is called the hyperfocal point. At this point the objects located at the distance indicated on the focusing-scale of the camera focus sharply, but distant points are focused as circles. At the hyperfocal point these circles should be so small that when a print is seen at the usual reading-distance they will look like points. Experience has shown that these circles should not exceed $\frac{1}{100}$ inch in diameter.

To find the place to set the lens so that these circles shall not exceed $\frac{1}{100}$ inch in diameter, two methods are used. The first method is to figure out by means of a formula how near to the camera the objects will be that will focus sharply when the circles created by distant points do not exceed $\frac{1}{100}$ inch, and then to set the lens at the corresponding distance on the focusing-scale. This distance will vary with the diaphragm used, and with the focal length of the lens, making it necessary to figure these distances separately for each lens. The other method, a new one as far as I know, is to figure the distance between the location of the lens when focusing distant points sharply, and when focusing them so that circles of diffusion do not exceed the maximum diameter. As will be seen by proof below, this distance varies only with the F-number of the diaphragm used, and so is applicable to all focal lengths. Where $\frac{1}{100}$ inch is used as the maximum circle of diffusion, these distances are the same in hundredths of an inch as the F-number of the diaphragm used.



Illustrating the Influence of the Diaphragm

C = circle of confusion
L = focal length
D = diameter of diaphragm
X = movement of lens necessary to make blur equal to C
F = F-number of diaphragm

(1) $\frac{X}{C} = \frac{L}{D}$ similar triangles

(2) $D = \frac{L}{F}$ because $F = \frac{L}{D}$

(3) $\frac{X}{C} = \frac{\frac{L}{}}{\frac{L}{F}}$ substituting in above equation No. 1

$\frac{X}{C} = \frac{LF}{L}$ clearing of fractions

$X = C\,F$

Where $C = \frac{1}{100}$ of inch we have $X = \frac{F}{100}$, where $F = 6$ we have $X = .06$ inch

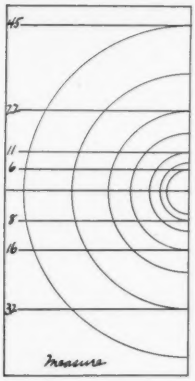


FIG. I. — Measure drawn to enlarged scale. In actual size each circle has a radius in hundredths of an inch equal to the F-number of the circle.

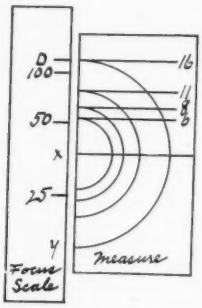


FIG. II. — Finding the hyperfocal point. X indicates hyperfocal point for F/16. Y indicates distance of nearest objects that will be in focus when lens is set at X and F/16.

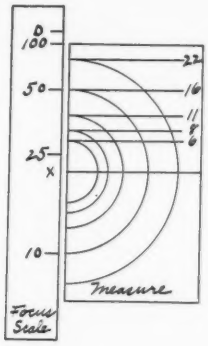


FIG. III.—Bringing extremes into focus. To get both 10 feet and 50 feet in focus, set the lens at X and use F/16.

Knowing these distances, we can then make a measure which will show how far the lens should be moved forward from the place where distant points focus sharply in order to get the hyperfocal point for that lens (see Fig. II). There will be objects located between the hyperfocal distance and the camera which will focus as circles not exceeding the maximum diameter of diffusion. By extending our measure the opposite way from the hyperfocal point, we can locate the nearest limit of these objects. By connecting the respective points for each opening by semicircles, we can see how much latitude each diaphragm allows (see Fig. I for completed measure).

We can also extend the use of this measure to solve another problem. Suppose we want objects at 10 feet and 50 feet to be in focus, and want to know what diaphragm to use and where to set the lens. Determine which semicircle embraces the 10- and 50-feet marks on the focusing-scale of the camera. This will give the diaphragm-opening necessary. The mark corresponding to the hyperfocal point will be the place to set the lens (see Fig. III).

Further Comments of an Amateur

HAROLD N. LOEB

A NUMBER of persons to whom price is a matter of secondary consideration have been heard to say that they would be pleased to purchase a miniature camera equipped with a motion-picture lens working at F/3.5 or F/2.5, were such an instrument obtainable. An outfit of this kind, fitted with a good shutter, would be more independent of light-conditions than the best camera other than a motion-picture machine that can be procured at the present time, and ought not to cost more than $50. The depth of focus of these small lenses, even at their biggest apertures, is well known to patrons of motion-picture theaters.

Incidentally, a European lens-manufacturer is now advertising an anastigmat in the larger sizes working at F/4, a gain over the F/4.5 speed which seems to have been considered in America the fastest practicable for these many years.

Another fact that owners of lenses that do better than F/6 may have noted is the dearth of compact cameras to which they may be fitted. At the present writing I can think of only two cameras which are comparatively compact in the smaller sizes which will accommodate big lenses — the Graphic and one of the Ensign models. The Speed Kodak was a good camera of this type, but to the best of my knowledge it has been withdrawn from the market. Any one who has "toted" a Graflex or a view-camera on a tour will understand the reason for these remarks.

Another product that is sadly needed and cannot be had is a speed-film working as quickly as

AUTUMN-SWEETS
GERHARD SISTERS

the fastest plates. There are many occasions on which photographers are willing to sacrifice color-sensitiveness, fineness of grain, non-halation qualities — everything, in fact, for speed. And at such times, the difference between F/111 and F/156 (Wynne), the relative speeds of the fastest films and the fastest plates, is felt to be a serious handicap by users of film-cameras.

An amateur friend of mine has discovered what to me is a new and simple method of producing double or tinted borders on prints. I give it for what it is worth. Instead of double-printing with edge and middle masks, he uses a single cut-out mask about one-quarter inch in width of architect's tracing-paper. On this is superimposed another mask of opaque paper, one-eighth inch in width, glued to the first so that their outer edges coincide. The tracing-paper, being semi-transparent, produces a gray inner border, and the outer, opaque mask, a white border, both during the same printing.

While I am speaking of masks, I wish to say a few words regarding the shape of photographs. I am not one of those amateurs who admire pictures the edges of which are a fanciful series of curves, as supplied by the packets of "assorted masks" on the market. At the same time, I will risk censure by stating that an equilateral triangle frequently produces more pleasing pictures than the immemorial rectangular shape. Especially is this true of portraiture, where a "spread" of background on both sides of the head and shoulders of the subject seems odious to me, because superfluous. Of course, such a portrait should be mounted on a triangular mount. In landscape-photography, other geometrical figures, such as the diamond, may sometimes, though rarely, be used to advantage.

At the risk of even more severe criticism, I will state that a photographic comment which I read recently was particularly irksome to me. It was to the effect that the advanced worker can tell the makers of our best examples of photography by their peculiar personal touches, their style, individuality or whatnot. They can "spot" a Garo or a Dührkoop photograph without the maker's signature. Do you believe this? If you do, you belittle the skill of thousands of professional portraitists in every city of the country. We have had too much of this wordy piffle that "sounds good in print."

In conclusion, permit me to urge you not to let your painter-friends derogate photography because it reproduces nature in monotone, for therein lies the glory of photography. What etching, or charcoal- or pencil-drawing ever approached its subtle half-tones? And who likes a "colored photograph"?

NEW YORK FROM THE EAST RIVER — JOSEPH MAERZ

EDITORIAL

Faulty Lantern-Projection

CONSCIENTIOUS attention to the success of a task by a paid employee is said to be alarmingly on the decrease. This lack of interest among attendants in mercantile life, in domestic affairs and, indeed, almost every walk of life, is generally recognized, but is not so easy to remedy. In many instances it appears that it is not so much a matter of carelessness as it is of insufficient training — indeed, it is merely a case of inefficiency. In photographic activities one meets it frequently, notably in the department of lantern-projection, which has become an indispensable adjunct to our educational system, and is *per se* an inexhaustible source of entertainment. Here, indeed, is an occupation that calls for skilled and trustworthy operators; yet they are hard to find. Not only are the shortcomings of the average lanternist a source of annoyance to the lecturer, but to the audience as well. The acts of commission and omission on the part of this functionary are well-known, and the requirements exacted from him have tended so to raise the standard of efficiency among this class of assistants that it is positively delightful to observe how smoothly the operation of an optical lantern can be accomplished. The source of illumination is brilliant, steady and virtually silent; the machine remains firm in its position; the lantern-slides are projected without a jar or other mishap; the definition on the screen is irreproachable; and last, but not least, the screen itself is clean and flat, all of which puts the lecturer and the audience in an easy frame of mind.

But sometimes the lecturer himself is responsible for certain annoyances. For him publicly to request his assistant to replace a lantern-slide removed prematurely, may be embarrassing to that functionary, though not his fault. Sometimes a picture will be projected upside down or even reversed, because the label has been placed on the wrong corner of the lantern-slide.

The speaker should see that the lantern or stereopticon is of a type the operation of which shall not be a source of annoyance to the audience. The housing should be lightproof, so that no rays from the light-source or brilliant reflections shall reach the eyes of the spectators. If the machine is placed entirely in the rear of the hall, these defects will not be troublesome. The lantern-slides should be of standard size and thickness. The screen, unless a roller-curtain of stiff and perfectly flat material, should be free of creases, wrinkles and holes, stains and spots. The silent electric signal should be used if possible, as the pounding of the pointer is annoying, and the ever-recurring request, "The next, please!" unpleasantly monotonous. Many speakers have the habit of addressing their remarks to the screen, and thereby prevent them from being heard. Some thoughtlessly turn their backs to the audience in describing a screen-picture, which is even worse. The lecturer should be so familiar with his subject and the accompanying views, that he can face his hearers during the entire discourse. Even when using the pointer, he should manage to direct his voice towards the audience.

At meetings of camera-clubs and scientific societies, some member generally serves the optical lantern. He likes to perform this pleasant duty and also save to the club the expense of a professional operator. But often a well-meaning though inexperienced person will attempt to operate the stereopticon, and, as a result, ludicrous and embarrassing incidents occur. For instance, if the lantern has an old-fashioned slide-carrier, the entire operation of pushing in a slide, and displacing it by its successor in the same clumsy way, is visible on the screen, and the effect of illusion is completely lost. When a slide that is too thick is inserted, it will stop in its passage, leaving a section of the screen uncovered. The unlucky diapositive is then pushed and pulled, the lantern wobbling painfully meanwhile, until, at last, it yields to the frantic efforts of the operator, and is either forced into place or quickly removed. During the course of the struggle, the forms of gigantic digits are seen on the screen, and the slide is covered with finger-prints, which obviously do not improve its appearance. The audience might be spared the sight of these bungling efforts of the operator, would he but cap his lens; but this simple expedient probably does not occur to him, or, maybe, there is no cap. Sometimes, when an arc-light is used as the illuminant, and the carbons are not placed at the proper distance from the condensor, the screen is not lighted evenly, and the necessary adjustment, unless effected quickly and skilfully, will annoy many in the audience.

THE WOUNDED HAWK
FIRST PRIZE — NATURE-STUDY SUBJECTS
WESLEY HEEBNER

ADVANCED COMPETITION

Closing the last day of every month
Address all prints to PHOTO-ERA, Advanced Competition
383 Boylston Street, Boston, U. S. A.

Prizes

First Prize: Value $10.00.
Second Prize: Value $5.00.
Third Prize: Value $2.50.
Honorable Mention: Those whose work is deemed worthy of reproduction with the prize-winning pictures, or in later issues, will be given Honorable Mention.

Prizes may be chosen by the winner, and will be awarded in photographic materials sold by any dealer or manufacturer who advertises in PHOTO-ERA, or in books. If preferred, the winner of a first prize may have a solid silver cup, of artistic design, suitably engraved.

Rules

1. This competition is free and open to any camerist desiring to enter.

2. As many prints as desired, in any medium except blue-print, may be entered, but they must represent the unaided work of the competitor from start to finish, and must be artistically mounted. ***Subjects which have appeared in other publications are not eligible, nor may duplicate prints be sold, or entered in competition elsewhere, before Photo-Era awards are announced.*** Sepia-prints on rough paper are not suitable for reproduction, and such should be accompanied by smooth prints on P. O. P. or black-and-white paper having the same gradations and detail.

3. *Unsuccessful prints will not be returned unless return-postage at the rate of one cent for each two ounces or fraction is sent with the data.*

4. *Each print entered must bear the maker's name, address, the title of the picture and the name and month of the competition, and should be accompanied by a letter,* SENT SEPARATELY, *giving full particulars of date, light, plate or film, make, type and focus of lens, stop used, exposure, developer and printing-process. Enclose return-postage in this letter. Data-blanks will be sent upon request.* ***Be sure to state on the back of every print exactly for what competition it is intended.***

5. Prints receiving prizes or Honorable Mention become the property of PHOTO-ERA, unless otherwise requested by the contestant. If suitable, they will be published in PHOTO-ERA, full credit in each case being given to the maker.

6. Competitors are requested not to send enlargements greater in size than 8 x 10 or mounts larger than 12 x 15, unless they are packed with *double thicknesses of* ***stiff*** *corrugated board, not the flexible kind, or with thin wood-veneer.* Large packages may be sent by express very cheaply and with indemnity against loss.

7. The prints winning prizes or Honorable Mention in the twelve successive competitions of every year constitute a circulating collection which will be sent for public exhibition to camera-clubs, art-clubs and educational institutions throughout the country. The only charge is prepayment of expressage to the next destination on the route-list. This collection is every year of rare beauty and exceptional educational value.

Quarterly Miscellaneous Competitions

IN order to extend the opportunities for participation by a larger number of our readers, and to broaden the scope of the entries, these will be a feature of 1917.

Awards — Nature-Study Subjects
Closed July 31, 1916

First Prize: Wesley Heebner.
Second Prize: William S. Davis.
Third Prize: Lawrence Baker.
Honorable Mention: Frank R. Eddy, J. H. Field, Gustave Glueckert, Chas. O. Handley, Judson Hayward, E. D. Leppert, Esther Heacock, Louis R. Murray, Harry G. Phister, B. C. Rounds, Myra D. Scales, W. Stelcik, Mrs. H. C. Travis, Harry D. Williar.

Special commendation is due the following workers for meritorious prints: Joseph Abel, F. E. Bronson, R. A. Buchannan, A. B. Klugh, E. D. Leppert, C. M. Littlefield, F. F. Weaver.

Subjects for Competition

"Animals in Landscape." Closes September 30.
"Marines." Closes October 31.
"Camp-Scenes." Closes November 30.
"Flashlights." Closes December 31.
"The Spirit of Christmas." Closes January 31.
"Miscellaneous." Closes February 28.
"The Spirit of Winter." Closes March 31.
"Home-Portraits." Closes April 30.
"Miscellaneous." Closes May 31.
"The Spirit of Spring." Closes June 30.
"Landscapes with Figures." Closes July 31.
"Miscellaneous." Closes August 31.
"The Spirit of Summer." Closes September 30.
"Vacation-Pictures." Closes October 31.

Photo-Era Prize-Cup

IN deference to the wishes of prize-winners, the Publisher will give them the choice of photographic supplies to the full amount of the First Prize ($10.00), or a solid silver cup of artistic and original design, suitably inscribed, as shown in the accompanying illustration.

A Test for Metol

IN a recent issue of *The Photographic Journal of America* E. J. Wall gives the following test for Metol. Make a 1 to 20 solution in water, add a little sulphuric acid, cool by adding ice and then add with constant stirring enough strong solution of sodium nitrate to make the mixture smell of nitrous acid. If the substance be Metol a mass of fine needle crystals will separate.

Camp-Scenes

Advanced Competition, Closes Nov. 30, 1916

THE popularity of the summer-camp seems to be increasing steadily; and that this is so is a cheering indication of a more sane and sensible attitude toward life on the part of our people. There was comparatively little recreation for mind or body in the still-not-extinct vacation spent in donning many changes of fine raiment and adorning hotel piazzas where hundreds of other lay-figures were on exhibition — the chief exercise of such vacationists being fancy-work or sitting on the beach in bathing-suits too fine and expensive to stand wetting.

Very different is the camp-vacation. There, plain, wholesome food and plain, sensible clothes combine with outdoor-exercise — swimming, horseback-riding, tramping — to build up a sound mind in a sound body and give a new zest to life. In an organized camp, training is also given in handicraft of various kinds, so that pleasant and profitable occupation adds its stimulus to mind and hand.

Of course the camera is a vital part of life in camp, and no other souvenirs of such a vacation could ever mean as much to the campers as the snapshots of actual incidents and camp-experiences. The average snapshot, however, is hardly likely to be such stuff as prize-winners are made of, and one must think out one's picture, here as elsewhere, and be sure that simplicity, good composition and lighting do their part to ensure success. Even the homely everyday-duties, when they are done after the primitive manner suited to real camp-life, take on elements of the picturesque and make good subjects for camera-studies. Cooking, gipsy-fashion, over an open camp-fire is not only good sport but good camera-material. The open fire has an attraction for all sorts and conditions of men, and especially attractive is the fire in the outdoor surroundings, with its suggestions of our pioneer forefathers, and of the primitive races of all history.

The pot suspended by a tripod is particularly picturesque, and all campfire-scenes gain in interest if a twilight-effect is obtained. This can be done only by the use of the flashlight, but by that means many very interesting studies can be made. In order to carry out the idea of the firelight, the flash must be used in the fire. A good way is to use the powdered magnesium, which is not explosive, and may be wrapped in tissue-paper and tossed into the blaze. There might be a merry group around the fire roasting corn, cooking bacon on pointed sticks or simply "swapping yarns" in friendly fashion. Some of the sitters should be persuaded to sacrifice their pride to the cause of art and allow a back-view to be taken, as the dark silhouette against the light beyond is most effective, and the idea of the circle about the fire can be carried out only in this way. It is astonishing how characteristic a back-view of this sort can be, and how unmistakable is the likeness. If the camp be that of a group of Boy-Scouts or Campfire-Girls, the chances of picturesque effect are increased by the costumes.

A group of Boy-Scouts busy about their tents, or even at the meal-hour, would be good material, whereas a group of Campfire-Girls in their Indian costumes, seated about their Council Fire, is a picture long to be remembered. In organized camps for young people many arts and crafts are taught. Picturesque groupings of the boys or girls at work should be easy to make. Basketry, with its suggestions of Indian handiwork, might lend itself to our purpose, as would also work in pottery or weaving. When horseback-riding is taught, a great opportunity is offered for work with the camera: the tethered horses being fed, or a group being saddled and brought around for a trip; a mounted group of campers off for the day with their equipment, or the same coming home in the evening-light. All make good picture-material. Many times the camp itself is so "beautiful for situation" that it alone makes a real picture. Either nestled into a hollow of the hills, or reflected in the waters of a quiet lake, its white tents form an interesting focus for the eye and give life to the picture. Water of some sort is a necessary accompaniment of the camp life, and many of the camp activities gain in picturesqueness if performed in its proximity. The camp-cook washing and preparing his vegetables beside the brook or lake, morning ablutions performed from the side of boat or canoe, the morning dip in the cool waters, dish washing in the lake — any of these could be worked up into picture-material.

The files of PHOTO-ERA show a great dearth of pictures of this sort; I suspect because of lack of thought and care in the making of pictures submitted. They must be more than lucky snapshots. They must show a well-thought-out composition and arrangement. It takes a little experience and a few spoiled plates to make one realize that not everything that is interesting to observe will make a good picture. The one who swears by "things as they are" is very apt to have a collection of plates showing a promiscuous assortment of "things" in the background or, worse yet, in the foreground, that ruins the artistic value of his work. Here as everywhere else it is a question, not of how much can I include, but of how much can I leave out. A good plan is to begin, not with a confusion of things, and then eliminate, but with a single element, and then add only those things that are necessary to tell the story.

In the issue of PHOTO-ERA for April of this year (page 181), you will find a camp-scene which has its good points and its bad ones. It commends itself for its simplicity, in the first place. There is no one item that could be spared; but in arrangement much is lacking. Perhaps the tent was taken as the nucleus, being needed to stamp it as a camp-scene. Then, since the fire is the center of camp-life, that is the next item added, then, to add life and interest, the four campers complete the very brief list of component parts. Of course, the apparent firelight comes from a flash set off behind the log, and the placing of the flash between the camera and the sitters was a rather daring thing to attempt. It was justified, however, by the results, although the picture would have gained by the cast shadows had a position been chosen a little more at one side. The grouping of the four men in a straight line directly across the print might well be criticized. Had one of the two center figures been raised a little, as by sitting on a stool, and the outside figure on the opposite side have been lying on one side, resting on one elbow, with feet toward the fire, the lines would have carried out the pyramidal composition and made the whole thing more pictorial and satisfactory without detracting from the naturalness in the least.

If the camp be that of hunters in the Maine woods or other wild country, it may be possible to get a good study including some of the game. Nothing could be less pictorial than the usual snapshot of the hunter with a row of deer strung up as tokens of his marksmanship; but an old guide stretching a skin or cleaning fish should make a good study.

Whether a large camp or a small one, whether it be in tents or cabins, or by lake, or stream, or mountain height — the primitive, simple "back to nature" kind of things are the ones that hold most of interest to the average human, and that furnish the most desirable camera-subjects.

KATHERINE BINGHAM.

SECOND PRIZE
NATURE-STUDY
SUBJECTS

THE NECTAR-GATHERER — WILLIAM S. DAVIS

The Value of the Swing-Front

MODERN lenses, when used at their full apertures, will give such good definition that for open landscape-work no stopping down is required. Apertures of F/6 enable one to use a rapid orthochromatic plate with, say, a 6- or 8-time light-filter for such subjects — and they are many — as will gain by such a method. But sometimes the foreground approaches the camera in such a way that the nearer portion is out of focus when suitable definition has been obtained on the rest of the subject. In such cases a swing-front or a swing-lens is a great advantage. Some hand-stand cameras possess this desirable addition, and I have recently had a hand-camera made to which a swing-front was fitted for this focusing-advantage, and nothing else. With screen-focusing — and, of course, a reflex camera gives screen-focusing in its own way — it is not very material whether the front of the lens is made to swing, but where adjustments have to be made blindfold the swing-lens is the better. For most adjustments however, the vertical displacement of the image by swinging the front is very slight, provided the front is pivoted through the axis of the lens, and where the lens is deeply set in the front-panel it is almost negligible. The degree of adjustment could be scaled according to the distance of that part of the foreground required in sharp focus, it being assumed that the lens was set at the hyperfocal distance for the F/6 stop.

C. H., in *The Amateur Photographer.*

Securing Parallelism in Copying

WE recently dealt with the best method of getting plate and subject parallel to one another in the process of copying, and pointed out that exact methods of securing the desired result were somewhat scarce. Mr. J. H. Gear in a recent discussion at the Royal Photographic Society advised the following method: Draw a right angle cross upon the focusing-screen in the center and make a white cardboard ring fitting the lens, with a pair of black threads at right angles crossing the opening. Lay a mirror flat on the copy and adjust things so that the reflection of the black threads

THIRD PRIZE
NATURE-STUDY
SUBJECTS

THE FROG — LAWRENCE BAKER

is focused on the screen, the image being superimposed on the cross drawn thereon. It is claimed that under these conditions the plate and copy will be as nearly parallel as possible, but to render that so, certain other conditions must be fulfilled as well. Assuming that the crossed threads are centrally opposite the lens, that the mark on the focusing-screen is similarly centered and that the cross is vertical, then fulfilling the prescribed conditions simply ensures that the lens-axis is at right angles or normal to the copy. If a rigid coyping-camera is used, then also the plate will be at right angles to the lens-axis and parallel to the copy; but if we are using an ordinary field-type of camera with adjustable back such parallelism is not necessarily ensured. If the cross is a vertical one it may still be possible to superimpose the cross image on the marked cross even when the back is swung considerably from the one correct position. If, however, we use a diagonal cross this will not be the case at all, and superposition then implies parallelism as well. With this precaution the method is a very good one, but it is advisable to use as large a piece of white card as convenient and the largest possible cross, otherwise the image will be very small, and it will not be easy to secure exact superposition. Care must be exercised to get both crosses properly centered.—*The British Journal of Photography.*

Weighing Small Quantities

THE photographer's scales, or "balance," is not always a very sensitive or accurate one, so that when weighing small quantities — a few grains of bromide, for instance — he may easily go considerably astray. Fortunately there are one or two simple little dodges which go a long way on the road tending towards accuracy. These are quite well known to students of chemistry, but do not seem to have been printed in photographic text-books. The reader may argue that a grain or two more or less cannot matter. Sometimes this is so; sometimes such an error may be disastrous. It is largely a question of proportion. If we are weighing an ounce of sodium carbonate, for example, probably 50 or even 100 grains more or less will not make or mar the results of a developer. But if we add two grains of bromide instead of one grain per ounce of developer the result is likely to be by no means negligible. Furthermore, with potassium bromide at 1s. 3d. per ounce as against 2d. about two years ago, it behooves one to avoid waste. In general terms, it may be said that if one's weighing (for most photographic purposes) does not exceed 10 percent, or say 9 or 11 grains in place of 10 grains, we are not likely to perceive any difference in final effect. Let us call the two (right and left) pans of the balance R and L. Usually we put the substance S in one pan — say R — and balance it by weights W, in the other pan, L, and take it for granted that S equals W. It may or may not be so. *Borda's Method:* Put the object S in R pan as before, then counterbalance this by putting sand, etc., in L pan. Now remove S from the R pan, and counterbalance the sand, etc., in L by weights in R. This gives the true weight-equivalent of S. *Gauss' Method:* Put the object S in the R pan, and balance with weights in the usual way, and suppose this to be n grains. Now put S in the L pan, and balance with weights in R. If again n grains are required then the object S weighs n grains. But if the balance is defective (as most are to some extent) let us suppose the second weighing to require m grains. To get the true weight multiply n by m, and then take the square root of this product. By way of example, suppose the first weighing shows 13 grains and the second weighing 22 grains. Multiplying these together we get 286. Taking the square root we get 17, very nearly, or an error of 4 grains in the first case. So that when using this balance in the usual way in future, one must remember to add mentally 4 grains to the weight in the left pan; i.e., what appears to be 14 grains is really 17 (very nearly).— F. C., in *The Amateur Photographer.*

XUM

THE CRUCIBLE

A MONTHLY DIGEST OF PHOTOGRAPHIC FACTS

With Reviews of Foreign Magazines, Progress and Investigation

Edited by PHIL M. RILEY

"Cold" Light for Motion-Pictures

ACCORDING to recent newspaper-reports, the substitution of paper rolls for celluloid films in motion-picture machines is made possible by the new "cold" light discovered by the French engineer, Dussaud, which is described to the Academy of Science by Professor Branley, with whom Dussaud studied the new light. It is obtained by automatic separation of heat-rays from luminous rays, which occur together in all sources of light hitherto known to science.

The quest of an absolutely pure light devoid of all heat, long has been one of the great problems of modern physics. The electric light is the nearest approach to this ideal, but far from it, as it gives off a certain amount of heat.

M. Dussaud has been working on this problem for many years. The light obtained by his method is so intense that it is possible to throw images from newspaper-illustrations, picture postcards and photographic prints on a screen even in a lighted room as clearly and sharply as if they were glass lantern-slides.

Removing Stains from Prints

IT is not at all easy completely to remove a yellowish stain from a print. Ordinarily it is cheaper to throw stained prints away rather than to devote valuable time and chemicals upon the doubtful chance of remedying them. As often as not the remedy will prove to be their ruin.

However, some improvement usually may be obtained by putting the prints through the chromium intensification process. First, bleach the prints in the following:

Potassium bichromate	100 grains
Hydrochloric acid	3 drams
Water	10 ounces

In about two minutes the prints will become a pale buff, when they may be washed for fifteen minutes in running water and then redeveloped with an ordinary amidol solution.

"Stereoscopic Relief" with Single Prints

Is it a fact not generally known that a kind of stereoscopic relief can be seen in single prints, if you look at them with one eye only? Or is the thing so well known that nobody ever mentions it?

Anyway, it is a fact, and I think it is rather interesting to speculate on the cause of the phenomenon. First, as to how and when you can see it. Of course, the relief is never so vivid as the relief seen in a stereoscope (or by squinting) with two prints taken with a stereoscopic camera; but it is very striking under favorable circumstances. I cannot perceive it at all in painted pictures nor in enlargements. I can see it only slightly in 4 x 5 prints; not very well with the tiny, vest-pocket size prints; but most vividly in prints made with a 2½ x 3½ camera. I think that the question of size depends on the focal length of one's eyes. I am short-sighted, and a 2½ x 3½ print just fills my field of *distinct* vision when I look at it in focus and without my spectacles. I expect that any one with longer sight could perceive the relief equally well in a larger print. To see it, you must shut one eye, and look at the print steadily with the other eye for a moment or two, and the relief will start into view. It is much more vivid with a glossy print than in one with a "velvet" or matte surface.

Now for the cause of the phenomenon. I have frequently seen it stated that the scene before us can never be seen in true relief unless we look at it with both eyes. This statement is quite wrong. The sense of relief does not depend entirely on our seeing a little bit more of one side with one eye, and a little bit more of the other with the other eye, and then combining the two images. On the contrary, the single eye is educated to perceive space in three dimensions by differences of light and shade and of angle — by linear and aërial perspective, in fact. We do not see it in any painted picture, because the representation is not sufficiently exact to nature. But the lens gives the linear and (in a properly exposed plate) the aërial perspective exactly as the eye sees it. If we look at an ordinary photograph with both eyes, the combined images of the two eyes show us that it is a flat piece of paper. But if we shut one eye, the other eye is deceived by the exactness of the reproduction into making us think that we see just that measure of "relief" which we perceive when we look at an actual scene with one eye. If the print be glossy, the surface of the paper is quite imperceptible; but if it be dull or rough we can see the surface of the paper when we look at the print with one eye. And this greatly detracts from the appearance of stereoscopic relief.

I used to have a stereoscopic camera. I gave it up because it was cumbersome, and twice as much trouble as making single prints. It was also more expensive. Yet I have sometimes regretted not being able any longer to make a stereoscopic print. But now that I find that I can get the "relief" with my little single prints almost as vividly as if they were stereoscopic, I no longer wish for what I have not got. I have been an amateur photographer for nineteen years, yet it was not until a year ago that I noticed this "stereoscopic relief" with single prints. I therefore suggest this new pleasure to any other photographers who have been as unobservant as myself.

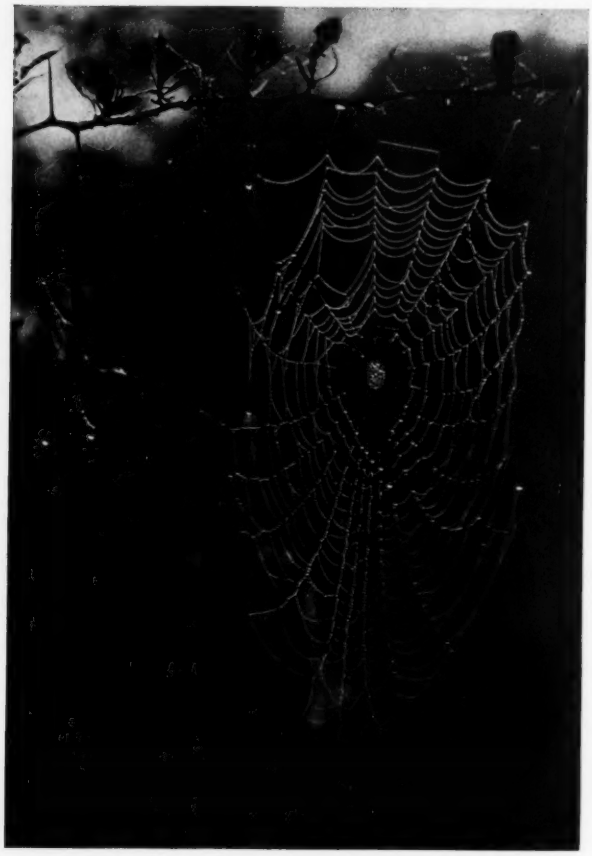
H. M. J. UNDERHILL, in *The Amateur Photographer*.

Vest-Pocket Negatives for Enlargement

THIS is the day of the very small camera, the vest-pocket type, as it is often called; and for one amateur who uses anything of quarter-plate size or larger, there must be several who are content to get original negatives not very much larger than postage-stamps. Nor, for most amateur purposes, is anything larger required.

Enlarging-methods are easy and perfect, and from a good original, however tiny, we may make an imposing and effective picture for our walls. The little camera, therefore, has added very greatly to the facilities at the disposal of the photographer; the question we have to ask ourselves is whether its capabilities are employed to anything like the extent which they might be.

How many of the negatives obtained with such instruments can be made the basis of good large photographs? Not as many as well might be. The little



NATURE'S JEWELS — J. H. FIELD

original must be critically sharp, for one thing. As far as the lens is concerned, this is not a difficult problem.

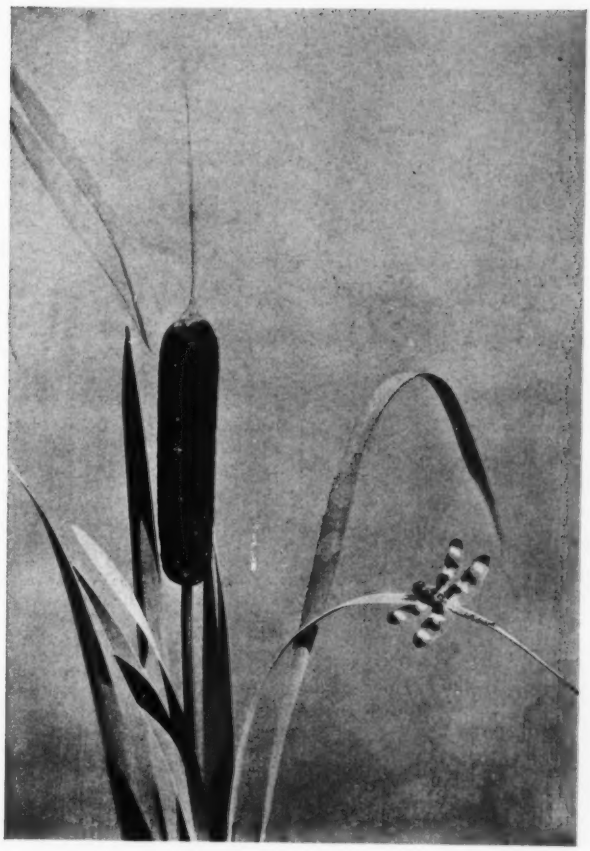
The extremely short-focus lenses which are almost always fitted on instruments of the vest-pocket type have great depth, and even with comparatively large stops they do not require that accuracy of focusing which must be given to longer-focus lenses on larger cameras.

Then, too, the small size of the film enables it to be kept flat, so that imperfect definition from a curved sensitive surface is not likely to arise. Yet, in spite of these advantages, many of the very small negatives which come our way are far from being sharp enough to give good enlargements.

The cause of this poor definition undoubtedly is movement of the camera at the moment of exposure. It is absolutely necessary to avoid this if the degree of enlargement is to be at all great; in fact, if movement is perceptible in the original at all, one may be pretty sure that any enlargement from it will be unsatisfactory, except, perhaps, to a member of the so-called "fuzzy school." Therefore, any one who gets such a camera with the idea of doing work which is subsequently to be enlarged, must recognize from the outset that the habit of making exposures without shaking the instrument has got to be acquired. The fault is a very common one in all hand-camera work, but is due oftener to a failure to recognize that steps have to be taken to guard against it, than to any real difficulty in avoiding it.

The extreme lightness of these small cameras is apt to cause one to be careless about their steadiness. On the other hand, the shutter-movement is so slight that there is little chance of any jar arising from it. The chief cause of shake lies in the failure to liberate the shutter properly. The precise way in which a camera should be held and the button pressed must depend upon the particular pattern, and to some extent upon the conditions at the time; but the broad principles remain the same. These are that we should neglect no opportunity to get any outside support for the body, so as to render ourselves as steady as possible; and the other is that in releasing the shutter it should be done with one finger of the hand which holds the camera, that finger pulling against the hand itself, so

HONORABLE MENTION
NATURE-STUDY SUBJECTS



RESTING — W. STELCIK

that only the "button," relatively to the camera, and not the entire camera itself, tends to move. We need not labor this point, which has been dealt with very fully in these columns.

There is one other reason why little negatives are not always as suitable for enlarging as they might be, and that is that they are underexposed. A full exposure is very necessary if the negative is to undergo great enlargement, for more reasons than one. It is necessary, of course, to any negative that is to give a good print, since without full exposure the tone-values in the shadows must be wrong. But it is additionally necessary when the picture is to be enlarged, because it is a generally recognized fact that the granularity of the image is markedly greater in the case of an underexposed result than of one that is fully exposed; and, if the negative is otherwise crisp in its definition, that granularity is the factor which is the ultimate limit to the degree of enlargement. Therefore, a full exposure is of great importance.

There are minor causes for failure in these small negatives, but we have named the two which are the most important. One must not overlook the fact that in apparatus of this extremely compact type all the clearances are reduced to a minimum, and a very slight distortion or strain may cause rubbing of the sensitive surface, and so give rise to marks on the negative. Guarding against these, and remembering that the apparatus, in spite of its trifling size, has got to be treated seriously, and that the selection of the viewpoint, the shading of the lens, and so on, are every whit as important as they are in the case of a 15 x 12, there is no reason why a good percentage of the total of the negatives obtained should not be capable of enlargement to six or eight diameters at the least, which is to say that an original little larger than a postage-stamp may provide an effective framed picture for the walls.—E. J. R., in *Photography and Focus.*

Just as Usual

"I SEE that Blithins is going to give an illustrated lecture on the Panama Canal."

"How is he going to illustrate it?"

"Why, with slides, of course."— *Gargoyle.*

BEGINNERS' COMPETITION

Closing the last day of every month
Address all prints to PHOTO-ERA, Round Robin Guild Competition
383 Boylston Street, Boston, U. S. A.

Prizes

First Prize: Value $5.00.
Second Prize: Value $2.50.
Third Prize: Value $1.50.
Honorable Mention: Those whose work is deemed worthy of reproduction with the prize-winning pictures, or in later issues, will be given Honorable Mention.

A certificate of award, printed on parchment paper, will be sent on request.

Subject for each contest is ***"Miscellaneous"***; but only original prints are desired.

Prizes, chosen by the winner, will be awarded in photographic materials sold by any dealer or manufacturer who advertises in PHOTO-ERA, or in books.

Rules

1. This competition is open only to members of the Round Robin Guild. Membership, however, is free to all subscribers; also to regular purchasers of PHOTO-ERA on receipt of their name and address, for registration, and that of their dealer.

2. All Guild members are eligible in this competition provided they never have received a prize from PHOTO-ERA other than in the Beginners' Class. Any one who has received only Honorable Mention in the PHOTO-ERA Advanced Competition still remains eligible in the Round Robin Guild Beginners' Competition; but upon winning a prize in the Advanced Class, one cannot again participate in the Beginners' Class. Of course, beginners are at liberty to enter the Advanced Class whenever they so desire.

3. As many prints as desired, in any medium except blue-print, may be entered, but they must represent the unaided work of the competitor from start to finish, and must be artistically mounted. ***Subjects which have appeared in other publications are not eligible, nor may duplicate prints be sold, or entered in competition elsewhere, before Photo-Era awards are announced.*** Sepia-prints on rough paper are not suitable for reproduction, and such should be accompanied by smooth prints on P. O. P. or black-and-white paper having the same gradations and detail.

4. *Unsuccessful prints will not be returned unless return-postage at the rate of one cent for each two ounces or fraction is sent with the data.* ***Criticism on request.***

5. *Each print entered must bear the maker's name, address, Guild-number, the title of the picture and the name and month of the competition, and should be accompanied by a letter,* SENT SEPARATELY, *giving full particulars of date, light, plate or film, make, type and focus of lens, stop used, exposure, developer and printing-process. Enclose return-postage in this letter. Data-blanks will be sent upon request.* ***Be sure to state on the back of every print exactly for what contest it is intended.***

6. Prints receiving prizes or Honorable Mention become the property of PHOTO-ERA, unless otherwise requested by the contestant. If suitable, they will be published in PHOTO-ERA, full credit being given.

7. Competitors are requested not to send enlargements greater in size than 8 x 10 or mounts larger than 12 x 15, unless they are packed with *double thicknesses of stiff corrugated board, not the flexible kind, or with thin wood-veneer.* Large packages may be sent by express very cheaply and with indemnity against loss.

Awards — Beginners' Contest
Closed July 31, 1916

First Prize: W. T. Starr.
Second Prize: William J. Wilson.
Third Prize: A. S. Upton.
Honorable Mention: Margaret Anderson, Ikko Kurachi, Irving S. Lovegrove, Wilma B. McDevitt, Louis R. Murray, Mrs. H. G. Reed, George P. Russell, Kenneth D. Smith.

Special commendation is due the following workers for meritorious prints: Susan W. Adams, Martha Curry, H. R. Hood, Takao Iwanami, Foster Lardner, Bert Leach, Dr. H. Pieter, Isaac N. Secor, M. C. Still, A. J. Voorhees, J. F. Webber, Elizabeth B. Wotkyns.

Why Every Beginner Should Compete

THE trouble with most competitions is that they place the beginner at a disadvantage. If advanced workers be allowed to compete, beginners have little chance to win prizes, and so quickly lose interest after a few trials.

There are two monthly competitions in which prints may be entered with prizes commensurate with the value of the subjects likely to be entered. They are: The Round Robin Guild Competition and the PHOTO-ERA Competition. The former is the better one for a beginner to enter first, though he may, whenever it pleases him, participate in the latter. After having won a few prizes in the Beginners' Class it is time to enter prints in the PHOTO-ERA Competition for advanced workers.

As soon as one has been awarded a prize in the PHOTO-ERA Competition, he may consider himself an advanced worker, so far as PHOTO-ERA records are concerned, and after that time, naturally, he will not care to be announced as the winner of a prize in the Beginners' Class, but will prefer always to compete in the PHOTO-ERA Competition for advanced workers. In accordance with this natural impulse, it has been made a rule by the Publisher that prize-winners in the Advanced Class may not compete in the Beginners' Class.

To measure skill with other beginners tends to maintain interest in the competition every month. Competent judges select the prize-winning prints, and if one does not find his among them there is a good reason. Sending a print which failed to the Guild Editor for criticism will disclose what it was, and if the error be technical rather than artistic, a request to the Guild Editor for suggestions how to avoid the trouble will bring forth expert information. The Round Robin Guild Departments, including those of personal counsel and criticism, form an endless chain of advice and assistance if members will connect the links.

IT is in arts themselves, as they exist, that we must find the elements to rejuvenate them. The characteristic of young schools is apparently an effort toward complex forms, expressing sensations and ideas of different æsthetic order. Most reformers in art are lacking in general ideas. They ask of isolated arts and not of associated arts a synthetic significance. Nowadays musicians exhaust themselves in literary efforts, poets in effects of color or music.— *Albéric Magnard.*

THE ROUND ROBIN GUILD

An Association of Beginners in Photography

Conducted by KATHERINE BINGHAM

This association, conducted under the auspices of PHOTO-ERA, and of which PHOTO-ERA is the official organ, is intended primarily for the benefit of beginners in photography. The aim of the association is to assist photographers by giving them information, advice and criticism in the Guild pages of PHOTO-ERA and by personal correspondence. Membership is free to subscribers and regular purchasers of the magazine sending name and address to PHOTO-ERA, The Round Robin Guild, 383 Boylston Street, Boston, U. S. A.

Bromide Enlarging

In looking over the summer's work, it is to be hoped that many amateurs will find among their negatives at least a few of prize-winning quality. If such is the case, these few should be given the best possible chance to make an impression on the judges.

Not infrequently, otherwise satisfactory plates are disqualified because of their small size, and the beginner is apt to think enlarging is beyond his powers or requires an expensive equipment. For one who has had any experience with the developing-papers, such as Velox or Azo, it should be very easy to take up Bromide-work, and a daylight-equipment for enlarging can be improvised at very little expense.

The first requirement is a room with one window that can be easily darkened. If this be upstairs where the window gets direct light from the sky, unobstructed by trees or buildings, so much the better. Rig some sort of rough shutter that will fit the window snugly and having an opening the size of the negatives to be enlarged from. To find the correct height for this opening, place a table under the window, and on this a box a foot or more high, which will furnish a steady and firm support for the camera you use for your ordinary work. The opening should then be made of such a size and height that when the camera, with its back removed, is placed on the box it will cover the opening.

The only other requirement is now some sort of easel to which to attach the paper on which the enlargement is to be made. This may be simply a large box standing on the table, if the table is long enough to give you the size of enlargement you desire. The side to which the paper is to be attached should be covered with a smooth piece of white cardboard, so that the paper will lie flat, and on this the focusing may be done. The opening in the shutter should be provided with grooves deep enough to hold two thicknesses of glass, and in them should be placed one thickness of ground-glass and the negative — the negative on the inside with the film side turned inward. Should the negative be a film, a thickness of clear glass should be placed on the inside — the negative being between that and the ground-glass. If the window does not get the light direct from the sky, a reflector should be arranged outside, resting on the window-sill at the bottom and tipping outward at an angle of 45 degrees, so as to reflect the light evenly against the ground-glass of the opening.

The negative being in place, the camera, on its box-support, and with the back removed, is backed up against it. If the camera is of the folding variety, focusing is done by sliding the lens back and forth on the camera-bed; but if it is of the box-variety, the camera itself must be moved back and forth until the right distance is found for the size of enlargement desired. When this method must be pursued, it will be necessary to cover the space between the negative and the camera by a focusing-cloth, or in some other manner exclude all light from the room save what comes through the lens and negative. (The shutter, of course, must be set on time and left open.)

After the camera has been put in place, and the white cardboard set up to receive the image, the worker should get an approximate focus and observe the size of the image. If it is too large, move the box bearing the focusing-screen nearer to the lens; if too small, increase the distance and again adjust the focus. It may be necessary to change the distance several times, at first, before the image can be adjusted to be in focus at the correct distance for the size required, but once this has been determined, the distance can be measured and will be constant for a given size.

Focusing should be done with a wide open lens, but a smaller opening used for the exposure. Having successfully adjusted the image, mark the corners with a pencil, then close the shutter, and with thumb-tacks attach the sensitive paper to the board so that the image will fall properly upon it. A red light should be arranged to allow proper adjustment when the lens is closed, for the bromide paper is very sensitive to white light.

The length of time to expose is the chief problem in this work, and much patience and paper will be saved by making a test-strip to gauge the time before exposing a large sheet. From half a minute up to three minutes with average negatives and paper should cover the extremes. Until one has become thoroughly familiar with the process and can judge exposure with fair assurance of accuracy, it is better to develop each print as made.

For developer, it is best to use that recommended for the grade of paper one is using, and if the directions furnished with the paper are followed carefully success should be assured.

Correct Color-Rendering

Now that the woods and hills are putting on their gorgeous autumn-coloring, the photographer feels more than ever the restrictions of his art which confine him to pictures in monochrome. The Autochrome plates and other individual color-processes, while giving astonishingly good results, are relatively expensive, and not practical for ordinary use.

The ordinary photographic plate is sensitive to the blue and violet rays to a much greater extent than to the green and yellow, and is nearly insensitive to red; hence the red light for developing. One does not notice this defect particularly until one has cause to notice some special instance. Possibly it is some clump of yellow flowers, like golden rod, that one has tried to photograph. They shine out so brightly and distinctly from the green surroundings that one is amazed and mystified to find that in one's picture they are hardly to be distinguished from their foliage. A cloudy sky is another thing the ordinary plate is seldom equal to rendering correctly. The blue of the sky acts on the

plate almost as strongly as the white clouds, and they are indistinguishable in the print.

There are many brands of Isochromatic and Orthochromatic plates on the market that obviate this trouble to a greater or lesser extent; but to get the best color-rendering, especially with the autumnal colorings, it is necessary to use a color-screen or ray-filter. This is simply a piece of yellow glass or gelatine slipped over the front of the lens — or in some cases behind it — which lessens the amount of violet light received by the plate and increases the action of the green, yellow and red end of the spectrum. If this screen is too deep, it over-corrects and makes the blue sky so dark that one imagines a thunder-storm is impending. The filter should be of a bright lemon color and, for ordinary landscape-work, should lengthen the exposure about three times.

Film-users will find that the film has more or less orthochromatic quality and that with the color-screen it produces excellent results. It is even possible to use the screen when holding the camera in the hand. A three-times screen should give a full exposure, in sunlight, at $\frac{1}{5}$ second, and, with care, that exposure can be given in the hand without movement. Full exposure is more than ever necessary with orthochromatic plates, as an underexposed plate of this type will be devoid of all atmospheric quality, and, indeed, will be less satisfactory than an ordinary plate properly exposed.

A screen with an ordinary plate is of no use whatever, and an ortho plate without a screen is hard to distinguish from an ordinary one; but a color-sensitive plate with a suitable color-screen is about the best equipment one could have for correct rendering of the autumn glories. Care must be taken in development not to expose the plates for too long a time to the action of the darkroom-light, as they are fogged more easily by red rays than are ordinary plates.

Flattening Prints

Editor PHOTO-ERA:

Regarding your July PHOTO-ERA, page 13, subject, "Flattening Mounted Prints," I have tried many ways to mount prints, including the one suggested in that article, but find that the best is to trim them and paste the back with a good paste, with the print dry. Next transfer to the mount, then place between blotters and at once place in copying-press, such as is used to make copies on tissue-paper of letters. This brings the print in perfect contact with the mount, and, if left in the press for a short time, the mount will curl but very little, and even if the mount is thin, as used in albums, it will be quite flat. Yours truly,

H. W. GREEN.

Needless Suffocation

ALMOST every summer some photographer writes us an account of the way in which he changed plates successfully at night by extinguishing the light in his bedroom and crawling under the bedclothes to do the work. No doubt the plates were not fogged; but then, if instead of getting under the clothes he had drawn up the blinds, opened the window if the night were a warm one and done the changing comfortably on a table in the room, he would also have got no fog, and the task would have been infinitely more pleasant. The scattered light of a summer's night in these latitudes has no effect upon a plate in the short time during which it need be exposed when filling or emptying slides. In the open air it would soon cause fog, perhaps; but in a room, even with the blinds up and the window open, there is no risk. When the moon is shining brightly into the room all we have to do is to keep the plates out of direct moonlight. It is apt to cause some surprise at first, as after a few moments the white coating on the plates can be distinctly seen, and changing is made all the easier thereby; but no harm results. We have used the method dozens of times, with the most sensitive plates, orthochromatic and ordinary, without any ill-effects whatever on any occasion.

Photography and Focus.

Gelatine, Moisture and Silver-Spots

EVERY one knows that when an unvarnished negative is printed on printing-out paper, and any moisture has access to the film, soluble salts of silver are transferred from the paper to the negative, and give rise to opaque spots, usually called "silver-spots," which are very hard to remove without injury to the image. But while this is recognized, the fact is often overlooked that rain or some other actual wetting is not at all necessary to produce them.

Gelatine is a substance which has a great attraction for moisture, so much so that some moisture is almost always present in it, do what we will. Fortunately, this minimum quantity is not enough to do harm. But in order to make sure that it is a minimum, or something approaching it, either the negative must be dried or it must at least have been kept in some place that was reasonably dry.

If the negative has been exposed to a damp atmosphere for a little while, such as is sure to be found in a room with an open, wet sink, the gelatine will absorb an appreciable quantity of moisture; in fact, if the negative is weighed on a good balance, and then made quite hot for a few minutes and weighed again, the loss of weight, due to water driven off, can be made visible. So that it is not enough to put the printing-frame where it will not get wet.

In damp weather, or where the negatives have been kept in a place not perfectly dry, it is a wise precaution to warm them before putting them in the printing-frame. If the pads of the back of the frame are also warmed, should there be any suspicion of damp, there is not much risk of the stains arising, unless the paper is left in the printing-frame all night — always a risky proceeding.— H. RIDGE, in *Photography and Focus.*

A War-Time Saving

AT the present time, when all chemicals are advanced in price (some out of all proportion with others), it is wise to see how far those which are less advanced may be substituted for the more costly. I had to prepare recently some neutral sulphite solution such as is used in the making of the A mixture in the pyro developer. For those who are not already acquainted with this I may say that pyro developer, made with neutral sulphite instead of acidified sulphite, requires less alkali in the B solution, and is therefore less likely to cause pyro stain and more lasting in use.

The formula usually given is as follows, the ingredients being dissolved in the order given:

Sodium sulphite (crystals)	2 ounces
Cold water	15 ounces
Potassium metabisulphite	$\frac{1}{4}$ ounce

Calculating out the available acidity of the metabisulphite, it appears that a quarter of an ounce may be replaced by thirty minims of concentrated sulphuric acid specific gravity 1.8 (this is the "pure sulphuric acid" of the chemist), together with a quarter of an ounce additional of sodium sulphite, and at the present prices this can be done at one-third the cost of the metabisulphite. One very important precaution is, however,

FIRST PRIZE
BEGINNERS'
CONTEST

BREAKERS — W. T. STARR

necessary, and that is to reverse the order of solution. In the former case we add solid metabisulphite to the dissolved sulphite. In the alternative we must add solid sulphite to the dissolved acid. To mix the two in solution causes failure. The formula will, therefore, read:

Pure sulphuric acid (sp. gravity 1.8)	30 minims
Cold water	15 ounces
Sodium sulphite (crystals)	2¼ ounces

As the amateur will usually prefer to make up a smaller quantity, I suggest the following procedure: One fluid ounce of sulphuric acid is added to nine ounces of water (not *vice versa*, or dangerous ebullition may occur). This is kept in a stoppered bottle labeled "Sulphuric acid 1-10." A six-ounce medicine-bottle (rinsed free of any which remains of a previous lot, or sulphuric acid will be dissipated) is nearly filled with water and 120 minims of the 1 in 10 sulphuric acid added; the mixture is shaken and six and a half drams of the solid sulphite added to it. The bottle is filled up with water if necessary, corked, and put down on its side, turning it over a few times until the sulphite is dissolved. In tabular form the quantities are:

Diluted sulphuric acid (1-10)	120 minims
Water (cold) to make	6 ounces
Sodium sulphite (crystals)	6½ drams

This solution corresponds with that made with metabisulphite except that a little sulphate is formed as a by-product. This, however, makes no difference in development. In fact, the sulphite used by photographers always contains more or less sulphate as an impurity.

The only danger is in adding too much acid, but, provided the final solution does not redden blue litmus paper, indicating excess of acid, there is no fear of error. Should excess of acid be used — and the same might arise in the use of metabisulphite, as samples of sulphite vary in alkalinity — it may be put right by the addition of a few crystals of sulphite. On the other hand, when the amount of acid used has not been quite sufficient, the only difference will be that the keeping-properties of the A solution of pyro will be lessened. Since, however, with crystal pyro it is so easy to weigh out a few grains, most amateurs will prefer to make their A solution at frequent intervals rather than keep a stock. The same applies to the solution of neutral sulphite.

Perhaps a more absolutely unjustifiable waste is seen in the preparation of the acid fixing-bath. The usual formula is:

Hypo	4 ounces
Water	1 pint
Potassium metabisulphite	¼ ounce

Instead of this, we may dissolve in a pint bottle four ounces of hypo in ten ounces of water. In another bottle, two drams of the 1 in 10 solution of sulphuric acid are added to ten ounces of water, and then two drams or more of crystallized sodium sulphite. Slight excess of sulphite is no detriment. Excess of acid must be avoided. The mixture is shaken until the sulphite is dissolved, and then the acid sulphite solution so made is added to the hypo in small quantities — say two or three ounces at a time — shaking after each addition. On no account may the hypo be added to the acid. The saving in cost at present prices is elevenpence in the shilling on the cost of the metabisulphite, and there is no question as regards the equal efficiency of one or the other.

T. H. GREENALL, in *Photography and Focus.*

ANSWERS TO QUERIES

Subscribers and regular readers wishing information upon any point in connection with their photographic work are invited to make use of this department. Address all inquiries to Correspondence Department, PHOTO-ERA, *383 Boylston Street, Boston, U. S. A. If a personal reply is desired, a self-addressed, stamped envelope must be enclosed.*

P. O. W.— **An acid fixing-bath** suitable for both negatives and prints, and which employs all salts instead of including liquid acetic acid, is as follows:

Water	64 ounces
Hypo	16 ounces
Sodium sulphite, anhydrous	1 ounce

When fully dissolved add the following hardener:

Powdered alum	½ ounce
Citric acid	½ ounce

As to your **light for enlarging,** it is difficult to advise you definitely without knowing the exact type of enlarger you are using. Of course there are to be had clusters of three and four Welsbach burners, both upright and inverted, if you must continue to use gas. If electricity is available, the new Nitrogen Mazda lamp with a concentrated filament is excellent for an enlarger having condensing-lenses. The electric arc is most commonly used by professional enlargers.

S. O. N.— **Failure to include wood-alcohol in the metol-hydroquinone developer** on page 89 of PHOTO-ERA for August, 1914, may cause difficulty in winter. The solution being considerably concentrated, it will partially crystallize if kept in a cold place. The addition of a proper amount of alcohol, and raising the temperature to 65 degrees, will re-dissolve the salts.

The slowness of working is also due, no doubt, to a low temperature. In winter there is always danger that trays and solutions will be too cold unless one works in a room that is always warm, or unless special precautions are taken. A paper-developer should be used, preferably at 70 degrees, and never cooler than 65. It is well to have a thermometer constantly in the tray.

R. O. C.— **Lettering on tombstones** should not be attempted on a cloudy day. To get the best results, this work should be done on days when the sun is shining brightly and obliquely across the surface of the stone which bears the lettering.

E. A. O.— **Lenses of whatever make are taken care of in the Photo-Era Exposure-Guide** by the table of stops. The chief advantage of anastigmat lenses over rapid rectilinears and meniscus types, aside from their linear- and color-corrections, etc., is that they may be used satisfactorily at large working-apertures, and it is through this characteristic that they are more rapid. Thus in computing exposures the stop in use rather than the make of the lens is the guide.

J. S.— The best way **to obtain a realistic firelight-scene** in monochrome is to stain or tone the print to a reddish hue. This may be done to the finished print with an aniline dye, such as new coccine (bright red), Ponceau 5R (red with violet tinge) or erythrosine (bluish red). Copper-toning will, perhaps, be more satisfactory for gaslight and bromide papers. Immerse the finished black print in:

Ammonium carbonate, saturated solution	1 ounce
Copper sulphate	10 grains
Potassium ferricyanide	25 grains

As toning proceeds, the print will pass through warm black, reddish sepia, brown, purple-brown, purple-crimson, reddish purple and through many shades of red to the so-called red chalk. Washing for ten minutes in water will stop toning at any desired stage.

E. K. S.— **The best tank-formula for glycin,** particularly for short exposures, is the following:

Hot water (200 degrees)	50 ounces
Sodium carbonate, anhydrous	2 ounces
Glycin	½ ounce
Sodium sulphite, anhydrous	½ ounce

Dissolve in the order stated. For 10-minute development, use 5 ounces of stock-solution to 30 ounces water. For 25-minute development, use 2 ounces of stock-solution to 32 ounces water. Temperature, 65 degrees.

HARD SLEDDING — WILLIAM J. WILSON
SECOND PRIZE — BEGINNERS' CONTEST

PRINT-CRITICISM

Address all prints for criticism, enclosing return-postage at the rate of one cent for each two ounces or fraction thereof, to Correspondence Department, PHOTO-ERA, *383 Boylston Street, Boston, U. S. A. Prints must bear the maker's name and address, and be accompanied by a letter, sent separately, giving full particulars of date, light, plate or film, stop used, exposure, developer and printing-process.*

A. J. V.— The trouble with "The Three Guardsmen" is that it needs a tinted or clouded sky; white paper like the present is decidedly detracting.

"Quiet Shore" would have been improved had the foreground tree been somewhat sharper in definition.

H. G. R.— Most of your genre-pictures of children suffer from overdevelopment — the white dresses being without detail or texture. "Southern Roses" is the most pleasing of your pictures this month.

K. D. S.— "The Serve" shows more action than "Raking Hay While the Sun Shines," the latter being merely suspended animation. In "The Serve" there is a white spot directly in front of the player's face which can easily be spotted out on the print, thereby greatly improving the effect.

"Summer Quietude" is a mere snapshot, and as a composition would have been better had the boat not been so centrally located in the picture-space.

H. R. H.—"The Frankfurter Man" is somewhat confused by two figures directly back of him which play no part in the story depicted, and also by the unnecessary figures to the right and left. Technically the result would have been better with shorter development.

A. S. W.— As space-compositions your last contributions are distinctly pleasing, but in definition and perspective they do not altogether satisfy critical judgment. Your "Tree in Springtime" is almost without detail anywhere. While "Our Back Yard" has fair definition on the distant buildings, they are insignificant as compared to the pattern of the silhouetted tree, which is considerably out of focus. "Snow Waters" is another subject which nowhere has sufficient definition, the distant trees in this instance being too important in the picture to be greatly slighted. In this respect "A Trapper's Trail" is much more satisfactory. Presumably the light in the center of "A Country Road" is the result of dust from an automobile seen in the distance along the road. We assume it is an automobile because considerable speed is required to create so much dust. There is, however, no other indication to show this is such a vehicle, and the composition would be much improved were it clearly defined, especially as the house at the extreme left is so distinct and so conspicuously light in tone.

W. J. W.—"Hard Sledding" is an interesting subject, well posed and pleasing in the unconsciousness of the model. The perspective and separation of planes in this subject are somewhat disappointing, due, no doubt, to the fact that definition is virtually uniform throughout the picture, and that a dark background always appears to be nearer than a light one. It is of the utmost importance to focus considerably more sharply upon a near plane when the background is dark, so as to emphasize perspective by separation of planes.

J. P.—"Old Glory on Memorial Day" seems to be a misnomer, for the flag itself and the ceremony occupy the background, while in the foreground several gravestones are prominently placed, one seeming to be as important as the other; there is no real center of interest. The particular print you have sent us is of uneven tone, apparently overtimed and taken from the developer too soon. "A Day's Pleasure in the Woods" is in every way more satisfactory, the figure is well placed and there is a pleasing absence of selfconsciousness.

A WOODLAND PATH — A. S. UPTON
THIRD PRIZE — BEGINNERS' CONTEST

W. R. B.— In "Ready for Mischief" you have the material for an excellent picture, but unfortunately you appear to have used a soft-focus lens with too large an effective aperture. Such a use of this type of lens defeats rather than aids your pictorial aims. The unfortunate halation from the white shirtwaists, which is a characteristic of such lens-work, is here particularly unnatural and objectionable. Very careful focusing upon foreground-objects is necessary.

H. A. C.— Your snow-scene is attractive as subject-material and well-spaced. The prominent tree, perhaps, is too emphatic in its darkness, especially as the snow-shadows are so faint. Try a softer-working paper and print a shade or two darker, and see if the result will prove more pleasing.

E. E. D.— The element of human life is lacking in your photograph "In Cascade Park," and the swing suspended from the prominent foreground-tree offered a ready means to introduce it. So beautiful a setting deserves your attention again.

I. S. L.— "Summer-Shadows" has been underexposed and forced in development, the foreground-tree being too dark and without detail, and the spots of sunlight on the grass white and also without detail. The best effect of sunlight is always had when definition is always good in both sunlight and shadow.

Calculated to give Full Shadow-Detail, at Sea-Level, 42° N. Lat.

For altitudes up to 5000 feet no change need be made. From 5000 to 8000 feet take ¾ of the time in the table. From 8000 to 12000 feet use ½ of the exposure in the table.

Exposure for average landscapes with light foreground, river-scenes, light-colored buildings, monuments, snow-scenes with trees in foreground. For use with Class 1 plates, stop F/8, or U. S. 4. For other plates, or stops, see the tables on the opposite page.

*These figures must be increased up to five times if the light is inclined to be yellow or red.
†Latitude 60° N. multiply by 3; 55° × 2; 52° × 2; 30° × 5/4.
‡Latitude 60° N. multiply by 2; 55° × 2; 52° × 1½; 30° × 3/4.
¶Latitude 60° N. multiply by 1¼; 55° × 1; 52° × 1; 30° × ½.
§Latitude 60° N. multiply by 1¼; 55° × 1; 52° × 1; 30° × ½.

HOUR	MONTH AND WEATHER																			
	JAN., NOV., DEC. †					FEB., OCT. ‡					MAR., APR., AUG., SEPT. ¶					MAY, JUNE, JULY §				
	Bright Sun	Hazy Sun	Diffused Light	Dull	Very Dull	Bright Sun	Hazy Sun	Diffused Light	Dull	Very Dull	Bright Sun	Hazy Sun	Diffused Light	Dull	Very Dull	Bright Sun	Hazy Sun	Diffused Light	Dull	Very Dull
11 A.M. to 1 P.M.	1/32	1/16	1/8	1/4	1/2	1/32	1/16	1/8	1/4	1/2	1/50	1/25	1/12	1/6	1/3	1/60	1/30	1/15	1/8	1/4
10–11 A.M. and 1–2 P.M.	1/25	1/12	1/6	1/3	2/3	1/25	1/12	1/6	1/3	2/3	1/40	1/20	1/10	1/5	1/2	1/60	1/30	1/15	1/8	1/4
9–10 A.M. and 2–3 P.M.	1*/12	1*/6	1*/3	2*/3	1*	1/16	1/8	1/4	1/2	1*	1/40	1/20	1/10	1/5	1/2	1/50	1/25	1/12	1/6	1/3
8–9 A.M. and 3–4 P.M.						1*/5	1*/2	1*	1 1*/2	3*	1/30	1/15	1/8	1/3	2/3	1/30	1/15	1/8	1/4	1/2
7–8 A.M. and 4–5 P.M.											1/20	1/10	1/5	1/2	3/4	1/20	1/10	1/5	1/3	2/3
6–7 A.M. and 5–6 P.M.											1*/15	1/8	1*/2	3*/4	1*	1/15	1/8	1/4	1/2	3/4
5–6 A.M. and 6–7 P.M.																1*/10	1*/5	1*/3	2*/3	1 1*/2

The exposures given are approximately correct, provided the shutter-speeds are accurately marked. In case the results are not just what you want, use the tables merely as a basis and increase or decrease the exposure to fit the conditions. Whenever possible keep the shutter-speed uniform and vary the amount of light when necessary by changing the stop. **Focal-plane shutters require only one-third of the exposures stated above.**

SUBJECTS. For other subjects, multiply the exposure for an average landscape by the number given for the class of subject.

1/8 Studies of sky and white clouds.

1/4 Open views of sea and sky; very distant landscapes; studies of rather heavy clouds; sunset- and sunrise-studies.

1/2 Open landscapes without foreground; open beach, harbor- and shipping-scenes; yachts under sail; very light-colored objects; studies of dark clouds; snow-scenes with no dark objects; most telephoto-subjects outdoors; wooded hills not far distant from lens.

2 Landscapes with medium foreground; landscapes in fog or mist; buildings showing both sunny and shady sides; well-lighted street-scenes; persons, animals and moving objects at least thirty feet away from the camera.

4 Landscapes with heavy foreground; buildings or trees occupying most of the picture; brook-scenes with heavy foliage; shipping about the docks; red-brick buildings and other dark objects; groups outdoors in the shade.

8 Portraits outdoors in the shade; very dark near objects, particularly when the image of the object nearly fills the plate and full shadow-detail is required.

16 to 48 Badly-lighted river-banks, ravines, glades and under the trees. **Wood-interiors** not open to the sky. **Average indoor-portraits** in a well-lighted room, light surroundings.

PLATES. When plates other than those in Class I are used, the exposure indicated above **must** be multiplied by the number given at the head of the class of plates.

For Perpetual Reference

As all the figures in the table opposite are based upon the use of stop F/8, or U. S. 4, it does not appear here among the ratios for other stops.	For other stops multiply by the number in the third column		
	U. S. 1	F/4	× 1/4
	U. S. 2	F/5.6	× 1/2
	U. S. 2.4	F/6.3	× 5/8
	U. S. 3	F/7	× 3/4
	U. S. 8	F/11	× 2
	U. S. 16	F/16	× 4
	U. S. 32	F/22	× 8
	U. S. 64	F/32	× 16

Example

The factors that determine correct exposure are, first, the strength of light; second, the amount of light and dark in the subject; third, speed of plate or film; fourth, the size of diaphragm used.

To photograph an average landscape with light foreground, in Feb., 2 to 3 P.M., bright sunshine, with plate from Class 1, R. R. Lens, stop F/8 (or U. S. 4). In the table look for "Hour," and under the column headed "Bright Sunshine," note time of exposure, 1/16 second. If a smaller stop is used, for instance, F/16, then to calculate time of exposure multiply the average time given for the F/8 stop by the number in the third column of the table for other stops, opposite the diaphragm chosen. The number opposite F/16 is 4. Multiply 1/16×4=1/4. Hence, the exposure will be 1/4 second.

For other plates consult the table of plate-speeds. If a plate from Class 1/2 be used, multiply the time given for average exposure, F/8 Class 1, by the number of the class. 1/16×1/2=1/32. Hence, the exposure will be 1/32 second.

Speeds of Plates on the American Market

Class-Numbers. No. 1, Photo-Era. No. 2, Wynne. No. 3, Watkins

Class 1/3, P. E. 156, Wy. 350, Wa.
Ilford Monarch
Lumière Sigma
Marion Record
Seed Graflex
Wellington Extreme

Class 1/2, P. E. 128, Wy. 250, Wa.
Ansco Speedex Film
Barnet Super-Speed Ortho.
Central Special
Cramer Crown
Eastman Speed-Film
Hammer Special Ex. Fast
Imperial Flashlight
Seed Gilt Edge 30
Wellington 'Xtra Speedy

Class 3/4, P. E. 120, Wy. 200, Wa.
Barnet Red Seal
Cramer Instantaneous Iso.
Defender Vulcan
Ensign Film
Hammer Extra Fast, B. L.
Ilford Zenith
Imperial Special Sensitive
Paget Extra Special Rapid
Paget Ortho. Extra Special Rapid

Class 1, P. E. 111, Wy. 180, Wa.
American
Ansco Film, N. C.
Atlas Roll-Film
Barnet Extra Rapid
Barnet Ortho. Extra Rapid
Central Comet
Imperial Non-Filter
Imperial Ortho. Special Sensitive
Kodak N. C. Film
Kodoid
Lumière Film and Blue Label
Marion P. S.
Premo Film-Pack
Seed Gilt Edge 27
Standard Imperial Portrait
Standard Polychrome
Stanley Regular
Vulcan Film
Wellington Anti-Screen
Wellington Film
Wellington Speedy
Wellington Iso. Speedy
W. & W. Panchromatic

Class 1 1/4, P. E. 90, Wy. 180, Wa.
Cramer Banner X
Cramer Isonon
Cramer Spectrum
Defender Ortho.
Defender Ortho., N.-H.
Eastman Extra Rapid
Hammer Extra Fast Ortho.
Hammer Non-Halation
Hammer Non-Halation Ortho.
Seed 26x
Seed C. Ortho.
Seed L. Ortho.
Seed Non-Halation
Seed Non-Halation Ortho.
Standard Extra
Standard Orthonon

Class 1 1/2, P. E. 84, Wy. 160, Wa.
Cramer Anchor
Lumière Ortho. A
Lumière Ortho. B

Class 2, P. E. 78, Wy. 120, Wa.
Cramer Medium Iso.
Ilford Rapid Chromatic
Ilford Special Rapid
Imperial Special Rapid
Lumière Panchro. C

Class 3, P. E. 64, Wy. 90, Wa.
Barnet Medium
Barnet Ortho. Medium
Cramer Trichromatic
Hammer Fast
Ilford Chromatic
Ilford Empress
Seed 23
Stanley Commercial
Wellington Landscape

Class 5, P. E. 56, Wy. 60, Wa.
Cramer Commercial
Hammer Slow
Hammer Slow Ortho.
Wellington Ortho. Process
W. & W. Process Panchromatic

Class 8, P. E. 39, Wy. 30, Wa.
Cramer Contrast
Cramer Slow Iso.
Cramer Slow Iso. Non-Halation
Ilford Halftone
Ilford Ordinary
Seed Process

Class 100, P. E. 11, Wy. 3, Wa.
Lumière Autochrome

XUM

OUR ILLUSTRATIONS

WILFRED A. FRENCH

We are again indebted to the Gerhard Sisters, those sympathetic interpreters of child-life, for the charming subject which adorns the current front-cover and an inside page. These prolific artists seem to have no difficulty to obtain pleasing models for their genre-pictures, and the little blonde, setting her pearly teeth into a delicious apple, does not make it clear whether the part she plays is that of Eve or of Pomona. The illusion of tasting what, to a certain young woman, was forbidden fruit is admirable. As in all of the productions of the Gerhard Sisters, the workmanship merits the highest praise. Data: Professional studio; May; Zeiss lens at full opening; 1 second.

Among the master-photographers whose work is seen only to be admired, is E. E. Doty, of Battle Creek, Mich. His women-models are always characterized by physical charm and refinement of expression. Of composition, Mr. Doty is complete master, avoiding the conventional as well as the grotesque, yet always natural. One is struck by the rare beauty of the subject, "Tender Thoughts," that glorifies the entrance of this issue by the masterly management of the light and the chemical effects which yield such superb color-values in the flesh-tones and the rest of the figure. Admirable, too, is the plastic impression or solidity of the engaging sitter — an effect gained only by complete understanding of all the resources of the art-science. The eye fairly revels in this artistic ensemble, and the mind delights to speculate upon the significance of the young woman's thoughts. The picture appeals as ardently to the eye as to the imagination. Data: Professional studio; diffused light from skylight; fire-effect from 300-Watt nitrogen lamp; 11 x 14 portrait-camera; B. Suter lens; 28-inch focus; stop, F/6; exposure about 10 seconds; Hammer Red Label; pyro; 11 x 14 Royal Bromide print.

The achievements in portraiture by Dr. T. W. Kilmer, an avowed and distinguished amateur, have attracted so much favorable attention from the readers of Photo-Era that many have expressed the wish to be favored by the artist's recital of his *modus operandi*, so that they might sip from the fountain of his knowledge. He has consented quite generously to accede to this general request, and his story, as told in these pages, is a clear statement of his manner of procedure, together with his sane and candid views on fallacies in photographic portraiture. The wisdom of his comments and practical advice will be valued by professionals and advanced amateurs alike. Rarely has a treatise on the most difficult branch of photography — home-portraiture — been treated in so masterly a fashion, and by an amateur, too, and supported by such admirable and convincing practical examples, as this contribution by Dr. Kilmer. Data: Portrait of Miss A. — 11 x 14 camera; 18-inch Verito lens; stop, F/5.6; light from window; 5 to 10 seconds; 11 x 14 Stanley; M. Q.; 11 x 14 Artura print. Portraits of Dr. M. and Dr. S., also portrait-study (old man with pipe), same data as portrait of Miss A.

The view in the Public Garden, Boston, presented on page 166, is one of the numerous Honorable Mention prints of the "Garden-Scenes" competition. For no special reason that we can remember, a mounted print of Vincent Driscoll's picture has been resting on a shelf in the Editor's room since last November. At first, it made a favorable impression and, as the original scene is only a few hundred feet distant — around the corner — it is beheld by the Editor several times during the week. The print was found to wear well; in fact, it improved on steady acquaintance, until, at last, it was sent away to be halftoned. As it appears here, it is constructed solidly and produces a strong and satisfying impression. The light was well chosen, producing pleasing and helpful shadows. There is a well-expressed feeling of interest, unity and proportion, imparting an air of distinction to a particular spot marked by unsuspected pictorial charm. Data: October 13, 1915; bright sun, but hazy; about 7.30 A.M.; Multispeed camera; $6\frac{1}{2}$-inch Verito lens; stop, F/6; $\frac{1}{50}$ second; Standard Polychrome; pyro; enlarged on Eastman Standard Bromide C (8 x 10).

The photographs that accompany H. L. Gleason's lesson on how to manage trees in pictorial photography give evidence of the writer's splendid executive ability, and add force to his arguments. Mr. Gleason's sound knowledge of the rules of pictorial composition is enhanced, in an eloquent degree, by his own pencil-sketches. The article and illustrations constitute an invaluable aid to aspiring photo-pictorialists. Data: 5 x 7 Pony Premo No. 2; B. & L. R. R. lens; 8-inch focus; F/16; April, July and August, 2 P.M.; 1 second; Premo Filmpack; Hydro-Metol; Glossy Cyko.

Among the favorite aquatic sports is the balancing of a swimmer on a board, drawn as evenly as possible by a swiftly moving motor-boat. The feat requires considerable physical skill, and the sensation of being pulled rapidly through noisily foaming waters is said to be quite exhilarating. The exploit is illustrated in a picturesque manner by Mr. Elder's photograph, page 174. The young woman-athlete is performing her part with successful daring and grace, and her muscular and well-shaped figure is relieved strikingly against the agitated waters. The excellence of Mr. Elder's work is clearly shown. Data: June afternoon; intense sun; 1-A Speed-Kodak; Zeiss-Kodak lens; 5-inch focus; stop, F/6.3; exposure about $\frac{1}{440}$ second; Eastman N. C. film. The model, 16 years old, is being towed at the rate of about thirty miles an hour.

Among the garden-spots of New England is Mount Desert (pronounce, Mount Dez'-ert) on the coast of Maine. Its natural beauties, forests, hills and a bay with a number of rock-bound islands, have been admired by tourists and native residents to the extent that, as the result of many years' arduous and unselfish work by a few men of wide vision, the region has been set aside by the Federal Government as a public recreation-ground, under the name of the Sieur de Monts National Park. The view by George R. King, page 175, shows Frenchman's Bay from Mt. Desert Island, on which is situated the celebrated summer-resort, Bar Harbor, with its numerous summer-residences of marked architectural beauty. Mr. King has devoted himself assiduously to the task of photographing Mt. Desert in its many aspects, and his extensive collection of views attests his eminent artistic skill. No data.

The impression of New York along the East River, in the neighborhood of Brooklyn Bridge, as depicted by the camera of Joseph Maerz, page 178, is typical and

pictorial. There is freedom, spontaneity and harmony in the composition — no obvious adherence to rules or tradition. Though the light was clear at the time of the exposure, there appears to have been enough haze in the atmosphere to produce a touch of the imaginative quality. This effect was enhanced in the enlarging by diffusion with a soft-focus lens. Data: August, 5.30 P.M.; fair light; 3¼ x 4¼ Hawk-Eye; 5-inch Zeiss-Kodak lens; stop, F/11; 1/25 second; Eastman N. C. film; M. Q.; 9 x 14 bromide enlargement with a Smith Semi-Achromat lens.

Advanced Competition

As a wide range was given the participants in the "Nature-Study Subjects" competition, the jury was justified to bestow official recognition on Mr. Heebner's startling theme, "The Wounded Hawk," page 180. How much the photographer had to do with the arrangement of the subject — the fierce attitude of the bird and its simulated attempt to withdraw the deadly arrow — is not stated. But he deserves much credit for the idea or the selection, and, notably, for the point of view and eminent executive ability. Data: July; good light; Wollensak Velostigmat; 12-inch focus; stop, F/45; 20 seconds; Seed Commercial Ortho; pyro; B. & J. series A. ray-filter; print, Prof. Cyko.

Of winning, artistic beauty is the "Nectar-Gatherer," page 183. The conception and arrangement merit the highest commendation. So do the illumination, judicious subordination of detail and chemical effect. Data: Study of butterfly and white Cosmos. Owing to conditions, it was considered advisable to do the work indoors, so the group was arranged about eighteen inches from the east window, near noon, on a November day. Diffused light; 20 seconds; Ilex Anastigmat; stop, F/16; Ingento A. ray-filter; Roebuck D. C. Ortho. As the butterfly, when found, was rather dormant from the effects of the cool air, there was no trouble experienced from motion during this exposure. Print, Enlarging-Cyko, Plat. surface.

As a purely open-air subject, one welcomes "The Frog," page 184. The setting is appropriately local and typical without detracting from the importance of the "sitter." The subject is not particularly handsome, nor calculated to arouse one's artistic ardor; but Mr. Baker has succeeded in investing it with pictorial interest. Data: August, 2.30 P.M.; bright sun; 5 x 7 view-camera; 8-inch R. R. lens; stop, U. S. 128; Forbes Ortho; pyro in tray; print, Enlarging-Cyko Linen.

The cobweb, by Mr. Field, page 186, is an unusually fine example of this popular theme. Suspended in artistic fashion, and displayed to excellent advantage, the delicate fabric excited one's admiration. Most subjects of this kind suffer from unfavorable surroundings, and when found free of objectionable features, including weather-conditions, the photographer needs to exert himself considerably in order to capture the prize. No data.

With the instincts of a true lover of nature, Mr. Stelcik was quick to observe the ordinarily trifling episode depicted on page 187. It is interesting to note how the artist seized upon the little incident and converted it into a pleasing, well-arranged picture. Data: June, at 3 P.M.; bright light; 5 x 7 Conley camera; R. O. lens; stop, F/8; 1/25 second; Standard Ortho; pyro, in tray; Azo D print.

Beginners' Competition

"BREAKERS," page 191, commands admiration on account of the force and breadth of treatment. There is a suggestion of vitality and power in the foaming mass, receding to hurl itself with undiminished force against the rocky cliff. The scene is typical of the Maine coast, and serves to display the artist's uncommon skill as a pictorialist. Nothing could be finer, in a marine of this character, than the management of the material presented — the pitting of the white mass of seething, moving waters against the dark, unflinching stone. Data: March, noon; dull light; 3¼ x 4¼ Graflex; 7-inch Verito; stop, F/4; 3-time color-screen; Standard Orthonon; pyro; 3¼ x 4¼ (direct) print on matte surface paper.

In examining Mr. Wilson's admirable composition, "Hard Sledding," page 192, one is impressed with the judicious arrangement of the group. In using similar scenes as camera-subjects, many photographers take little heed of the placement of the horses, when differing in color, or of the garb of the driver. Examples to show the absence of taste, resulting in lack of balance that characterizes most ploughing-scenes, are not necessary. The student can imagine easily what would be the effect were the driver, or farmer, in Mr. Wilson's picture represented as walking behind the white horse, or were the animals to exchange places and the man to be seen behind either horse. The artist, here, probably had these contingencies in mind and thus averted a grave pictorial error. His picture excels, too, in originality of pictorial design and sense of proportion. Data: September, 9 A.M.; bright light; 2¼ x 3¼ Icarette; 3½-inch Carl Zeiss Icar lens; stop, F/9; exposure 1/25 second; Eastman N. C. film; Kodak-powders in tank; print, P. M. C. No. 3, with Amidol.

It is interesting to note the success with which Mr. Upton, in his wood-interior, page 193, has used sunlight and yet avoided the danger of spottiness. The road is flecked with patches of sunlight; but approaching, as it does, the character of the sun-laden wood, and having good tone-values — due to intelligent exposure — the path escapes criticism. The whole effect is consistently harmonious. Data: July 9, 1916; bright sun; 3 A Kodak; Eastman N. C. film; M. Q.; B. & L. R. R. lens; stop, U. S. 8; exposure, 2 seconds; print, Special Royal Velox.

Hazardous Photography

THE temptation to make a snapshot under excitement, when subsequent restraint proves the better judgment, has been experienced by many a camerist. Unfortunately, an impulsive use of the camera may have regrettable consequences, as has frequently been the case. In certain circumstances it is very much like a child playing with fire. The freedom with which the camera is operated at the seashore, picnic-parties and "up the river" is a caution. It may be the means to make friends, but not without causing embarrassments and misunderstandings. To snap the camera at ladies in bathing-costume, without their expressed permission, is an act unbecoming a gentleman.

There are other occasions where it would be unwise to expose the camera. To snapshoot a friendly couple, neither married nor engaged, may be fun for the camerist; but it may lead to unpleasant results. The same is true when some one makes a flashlight of a group of quiet merrymakers, seated on the hotel veranda amid Cimmerian darkness. There is no doubt of the sensation caused by this unexpected revelation; but the fate that overtakes the camerist is nothing by comparison.

Photographs of a compromising character are very apt to lead the photographer into trouble. To this class belong combination-pictures made for the purpose of proving an alibi. However successful such a picture may be, there is generally on hand a photographic expert who can explain to the satisfaction of the court the *modus operandi* of the deception. W. A. F.

ON THE GROUND-GLASS

WILFRED A. FRENCH

A Case for the Tripod

It was a fashionable September wedding, and the ceremonies took place in a pine-grove near the bride's home, not far from Boston. Invited guests provided with hand-cameras eagerly "snapped" memorable scenes of the event, but ignorant of the fact that, though the sun was shining, the light was weak, being largely screened by branches all about. Many were the requests for prints; but every one was doomed to be disappointed, for the largest stop used was F/8, and virtual blanks were the general result.

An Unfortunate Blunder

Mrs. X., a well-known traveler and lecturer, returned last June from a special visit to Japan, where she exposed forty rolls of film, of twelve exposures each. She is booked to tour in the United States during the coming winter, giving a series of illustrated lectures on the temples of Japan. Her first thought, after her return to Boston, was the development of her films, which important task she entrusted to an experienced photo-finisher and dealer in that city. The expert appreciated the responsibility of the job and enjoined his assistant to be specially careful, and to report to him as the work progressed.

Shortly after the work had been started, the assistant emerged from the basement laboratory somewhat alarmed and holding six long strips of developed film in his hand. They were blanks, one and all! Of course, it was decided at once to stop right there and to investigate the cause. Films of other customers were then developed and turned out satisfactorily, which proved that the solutions were not at fault. *The films of Japan had not been exposed.* That point could not be disputed; and it was only fair to assume that the rest of the films would prove to be equally disappointing.

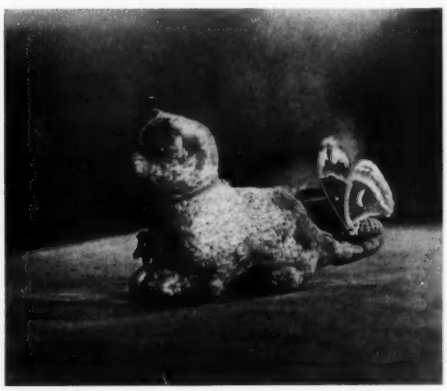
The proprietor, eager to learn the cause of the trouble, immediately telephoned Mrs. X. to bring in her camera, just as it was, and on no account to open it. Presently the lady appeared, carrying in her hand the fateful camera. She was requested to manipulate it just as she did when in Japan. As she detached the camera-back — to show how she removed the exposed film and inserted a fresh one — the first thing that the expert noticed was a leather cap covering the rear-lens. Desiring to have a specially efficient outfit, Mrs. X. had allowed her dealer — a firm on the Pacific Coast — to order a German anastigmat from New York. The lens arrived fitted to a standard shutter, each end being covered with a leather cap. When her dealer attached this combination to the camera, he failed to remove the rear-cap. In demonstrating the camera to his customer — who knew nothing, whatever, about photographic equipments — the salesman naturally urged that the cap on the front lens be removed before making an exposure, but, before closing the camera for any great length of time, it be replaced so as to protect the lens. Somehow, it never occured to him to mention the cap on the rear lens, and hidden from view.

The owner had obeyed instructions faithfully, as she demonstrated to the photo-finisher; but, knowing nothing about photography, beyond the mechanical operations necessary to make exposures and to load and unload her camera, she had failed to notice the cap that rested, undisturbed all the while, on the rear end of the lens, thus making exposures utterly impossible. In this way she lost the opportunity to bring home original pictures so essential to the success of her coming lectures. Of course, the Western dealer made good to her the price of the wasted films; but this restitution did not lessen her bitter disappointment.

An Adventurous Moth

Mr. George B. Kemp, Jr., a conscientious reader of this column, sent me an interesting nature-study, preferring that it be used for the "Ground-Glass" rather than for the "Nature-Study Subjects" competition, recently closed. Mr. Kemp's notes about the picture are as follows:

"The cocoon from which the moth came had been watched carefully all winter by the pupils of the 1B Grade in the William McKinley School, Indianapolis. Under the teacher's guidance, there was much speculation — when the warm spring-days came — as to whether anything would develop from the cocoon, also when and what.



THE ADVENTURE — GEORGE B. KEMP, JR.

"On their arrival at school, one Monday morning, the pupils found that the cocoon had opened, but the contents of the cocoon was not visible, for in defiance of all conventions, instead of remaining sitting on the twig kindly provided, the contents had wandered off. After a search, the moth was discovered sitting on the tail of a toy cat, on top of a cupboard. It permitted itself to be moved, still clinging to its cat, and in this position was placed on a window-sill, where it remained, much to the delight of the children and the amusement of the adults, for several days, until, taking advantage of the opened window, it flew away.

"I might add that I got the picture through the courtesy of the teacher, who knows my fondness for picturing the unusual, and so sent for me."

XUM

EVENTS OF THE MONTH

Announcements and Reports of Club and Association Meetings, Exhibitions and Conventions are solicited for publication

Photographers' Association of New England Eighteenth Annual Convention

September 12, 13 and 14, 1916

THIS annual event, of special interest to the New England professional photographers, was held as usual at Copley Hall, Boston. Though business among some of the large industries has been exceedingly prosperous since the European war began, the portrait-photographers of the United States have not been so happily placed. Many persons regard portraits by photography as a sort of luxury. Others, not appreciating all that enters into the making of a first-class photograph, think that the photographer is overcharging when he asks even $18.00 a dozen. Then, when another artist makes them, equally good, at $6.00 a dozen — why, they simply cannot understand it. Sometimes they patronize the lower-priced craftsman; sometimes not. In any event, the business is good in some parts of the country, and in very many of the smaller cities and towns of New England it is just the opposite. This condition, which cannot last always, prevented many members of the P. A. of N. E. living at a distance from attending the convention this year; consequently the attendance was relatively small — about 250 photographers, dealers and assistants. Nevertheless, the affair passed off pleasantly, and all but the dealers were satisfied. The photographer carried home new and practical ideas for use in the studio, the darkroom and the business. President Champlain gave up the mornings of the first two days to personal demonstrations, in his Tremont Street studio, of posing, lighting and the development of expression; and all agreed that never did an artist of Mr. Champlain's ability and industry give more convincingly and generously of his own cherished ideals in portraiture. Each morning the premises were filled to overflowing with interested visitors.

The address of welcome was delivered in the lecture-hall by J. Frederick Hopkins, director of the Normal Art School of Massachusetts, and produced a delightful impression. John I. Hoffman, secretary of the National Association, spoke briefly on the benefits of membership in the P. A. of A. This was followed by impromptu discussions, by members, on practical topics.

The studio-demonstration by President Champlain consumed virtually the entire forenoon. The afternoon-session was devoted to an admirable address, "Promotion of Trade-Department for the Studio," delivered by Mr. J. A. Dawes, of the Wollensak Optical Company, loudly applauded for his remarkably successful effort. A talk on the national association by Secretary Hoffman and short addresses by members followed.

On the first evening, Mr. A. E. Whitney, of Norwood, Mass., gave a very profitable lantern-talk on home-made devices, such as enlarging-apparatus; a print-dryer; adjustable darkroom-apron; a print-trimmer; an office-index for unfilled orders, and screens for novel lighting-effects in the studio and home-portraiture.

He was followed by Mr. Frederick E. Ives, inventor of the Kromscope and several important processes of color-photography, who read an interesting paper on the Hess-Ives Process (Hicrography), a successful method of producing color-photographs on paper. Mr. Henry Hess, of the Hess-Ives Corporation, then spoke on the business-side of Mr. Ives' subject, and a spirited discussion followed between Mr. Hess and some of his listeners, the former expressing his utmost faith in the ultimate adoption, by every portrait-photographer, of the Hess-Ives process of color-photography on paper.

The evening of the second day saw the discriminating ones at the convention-dinner served at the Lenox, 111 ladies and gentlemen being present. President Champlain, his own master of ceremonies, surprised even his intimate friends with an unsuspected gift of speech and reservoir of wit. He referred to the persons he invited to speak with a startling frankness and picturesque humor that made even the tables vibrate with mirth. Among the victims called upon to perform feats of oratory, but who proved wholly unprepared, were John P. Haley, his son, R. D. Haley, A. Allyn Bishop, John H. Garo, George H. Hastings, W. H. Partridge, Miss Hallie Wilson, J. C. Bushong, Miss Eve Proctor (Mr. Champlain's business-manager), John I. Hoffman and Frank R. Barrows. H. A. Collings was the only one who was equal to the occasion, and excelled in the importance of his topic and in fluency of speech. The banquet-room was then cleared of its furniture, and those who were not too exhausted after listening to the president's mirth-provoking remarks indulged in dancing till midnight.

The Charter of the P. A. of N. E.

Last session, afternoon of the third day. Beside the regular reports from the several committees, there was the presentation to the Association of its charter, from the parent body, the Photographers' Association of America, by National Secretary John I. Hoffman.

Presentation to Secretary Hastings

A complete surprise to the recipient, Secretary George H. Hastings was the presentation of a purse of $87 in gold from his friends at the convention. Mr. Hastings it was who organized the Photographers' Association of New England, served two years as its first president and ten years as its secretary. Having completed a ten-year term of hard and faithful service, and won the love and respect of every member of the Association, Mr. Hastings declined a renomination.

The Next Place of Meeting

Providence, the capital of Rhode Island, will entertain the next convention, in 1917. The Chamber of Commerce extended the invitation, a free hall, free transportation, both ways, of the Association's paraphernalia, and a free excursion together with a genuine Rhode Island clam-bake. The dates of the meeting will be announced as soon as determined by the new board.

An Association-Fund

Frank R. Barrows arose at this meeting and stated that he would be one of 100 members to give $5.00 towards a fund to be placed at the disposal of the Association. Immediately 34 members signified their readiness to contribute $5.00 towards such a fund, and

there is every prospect that the remaining 65 contributors will soon be found among those who failed to attend this year's convention.

Manufacturers and Dealers

The manufacturers and dealers were represented as follows:

The Ansco Company, with an adequate force, including W. A. Rockwood and Frank N. Leache, had a beautiful display of prints on Cyko Buff and Cyko Plat — collections by Garo, Clarence H. White, Hollinger, Noetzel, Carins, Goldensky, Towles, Bachrach, Champlain, Walters, Mersereau, Lee Brothers, Wittler, Mae L. Smith and Alice Boughton.

Bridges Mfg. Co., Rochester, photographic mounts.

California Card Mfg. Co., San Francisco, mounts and folders.

The Central Dry-Plate Company had the beautiful harmonious collection of prints that was so much admired at the Cleveland Convention last July.

A. M. Collins Manufacturing Company, artistic folders and mounts.

The Cramer Dry-Plate Company's expected show of prints was in charge of J. W. Beattie and R. P. Brackett. As it failed to arrive, the allotted wall-space was speedily filled with humorous impromptu pencil-sketches, mostly of real and of imaginary persons, by innocent visitors who were beguiled by the irresistible Mr. Beattie into manipulating the pencil to "help out."

The Eastman Kodak Company occupied its usual space, the platform, around which was hung a relatively small but exceedingly choice collection of portraits by master-photographers, each represented by six superb prints. They were Pirie MacDonald, Eugene Hutchinson, J. H. Garo, Dudley Hoyt, Frank Scott Clark, S. L. Stein, C. M. Hayes and E. E. Doty. The exhibit was in charge of Harry M. Fell, assisted by a corps of nine experts.

Ralph Harris & Company, Boston, photo-supplies. Sole American agents for Wellington plates and papers.

The Hess-Ives Corporation, Philadelphia. In charge of Henry Hess and Frederick E. Ives, who explained their improved process of color-photography on paper, as exemplified by a number of highly successful color-prints by such well-known photographers as Elias Goldensky and Dr. Arnold Genthe.

Kroner Photo-Print Dryer Company, Chicago. Their machine is considered one of the most practical and reliable labor-saving devices on the market.

Andrew J. Lloyd & Company, Boston, photo-supplies.

Pinkham & Smith Company, Boston, photo-supplies. P. & S. Semi-Achromatic lenses, repairing high-class cameras, shutters and lenses.

Robey-French Company, Boston. Latest models of cameras for portraits and views, rapid-printing machines, developing-tanks and other important up-to-date apparatus and devices.

Taprell-Loomis Company, Chicago. Latest styles in mountings for portraits.

Willis & Clements, Philadelphia. Platinotype and Japine Silver Papers. Beautiful display of prints.

Wollensak Optical Company, Rochester, N. Y. In personal charge of J. A. Dawes. Display of photographs by the leading workers, illustrating the sterling merits of the Verito, Velostigmat and other lenses of their construction.

Awards for Pictorial Merit

GRAND PORTRAIT CLASS

There were twenty-two entries in this important competition, though three of them were genres. The solid-gold medal was captured by A. K. Peterson, of Hartford, Connecticut, for a large portrait of a young woman, treated conventionally throughout, but pleasing. This competition was for one picture only, 8 x 10 or larger, open to the world.

THE CHAMPLAIN TROPHY-CUP

There were nine entries in this competition, each composed of three portraits made on 8 x 10 plates or smaller. The sterling-silver cup, ten inches high, was offered by Orrin Champlain, president of the P. A. of N. E., and was awarded to the Irving Kimball Studio, Boston. The successful set consisted of a group, a full-length, seated figure of an old lady and a portrait of a little child.

WOLLENSAK TROPHY-CUP

The cup, a counterpart of one awarded twice to W. H. Partridge, was won by W. A. Sands, of Brookline, Mass. There were eleven entries this year, viz., R. D. Haley, J. C. Bushong, W. A. Sands, M. B. Parkinson, Jared Gardner, William Godfrey, the Rand Studio, the Peterson Studio, Wm. J. Thibeault, the Whitney Studio and E. R. Trabold.

AWARDS IN THE STATE-EXHIBITS

The first state-prize, for Maine, to the Matthews Studio; the second to M. D. Hanson, of Portland.

The first, for New Hampshire, to Claude L. Powers, of Claremont; the second to the Andrews Studio.

The first, for Vermont, to Katherine Bingham, of St. Johnsbury; the second to A. Allyn Bishop, of Newport.

The first, for Massachusetts, to J. C. Bushong, of Worcester; the second to Whitman Studio, of Malden.

The first, for Rhode Island, to J. A. Vandall, of Pawtucket, the only entry.

The first, for Connecticut, to A. K. Peterson, of Hartford; the second to George E. Tingley, of Mystic.

The prize in the Landscape-class was awarded to George E. Tingley, of Mystic, Connecticut.

The prize in the Commercial class was awarded to E. Nicolai, of Palmer, Mass. There was no other entry.

The New Executive Board

President, M. D. Hanson, Portland, Maine.
First vice-president, Louis F. Bachrach, Boston, Mass.
Second vice-president, A. K. Peterson, Hartford, Conn.
Treasurer, Eugene A. Holton, Boston, Mass.
Secretary, A. E. Whitney, Norwood, Mass.

State Vice-Presidents

For Maine, Harry Plummer, Lewiston.
For New Hampshire, L. G. Ross, Newport.
For Vermont, Katherine Bingham, St. Johnsbury.
For Massachusetts, Ralph A. Schein, Chelsea.
For Rhode Island, John Sabine, Providence.
For Connecticut, R. D. Haley, Bridgeport.
For Maritime Provinces, Edson Graham, Wolfville, N. S.

The Display of Autochromes

The display of autochromes was placed in the center of the large hall, and was so arranged that pure daylight came from the unobstructed skylight overhead. Will Rounds, professional autochromist, contributed twenty-seven plates, which, for variety of subject and beauty of execution, were easily the best. Hiram Merrill, of Concord, N. H., had eighteen, and the Kimball Studio four plates, all being delightful themes and admirably done.

The Pictorial Exhibits

The pictorial exhibits were very interesting in the main. Of course, the collections of carefully selected prints from negatives by the foremost professional workers in America, shown by the manufacturers of plates, lenses and paper, are far ahead of anything the Association can accomplish in this respect. Nevertheless, the individual exhibits cannot and should not be overlooked. Aside from the numerous special displays, already referred to in this report, there were several complimentary ones of unusual merit, notably the selected prints constituting the 1916 Salon of the P. A. of A. The complimentary exhibits of home-portraiture by Louis F. Bachrach, the Kindergraph Studio, the Irving Kimball Studio, and H. H. Pierce, of Boston; F. A. Frizzell, of Dorchester; Wm. Noetzel, of Newton; Morris Burke Parkinson and W. A. Sands, of Brookline; and the Kimball Studio, of Concord, New Hampshire, showed the progress that has been made in this increasing branch of photography.

The Photographic Press

The photographic publications represented were *Abel's Weeklies*, by Charles L. Abel; *American Photography*, by Frank R. Fraprie; *The Bulletin of Photography*, and *The Camera*, by Mr. and Mrs. Frank V. Chambers, and *Photo-Era*, by Wilfred A. French, assisted by Miss Annie Cameron.

Photo-Era a Reference-Library

(*Continued from August issue*)

THERE is no better reference-library of photography than that provided by back numbers of PHOTO-ERA. The variety of subjects treated has been great; the writers include the best authorities and most successful practical workers, both professional and amateur, and most of the articles are illustrated. Regular readers who have kept a file of the magazine, or had each volume bound, will find the appended classified lists and those to be published in subsequent issues of value for reference. **Missing copies may be had at 25 cents each as long as the supply lasts.**

COMPOSITION AND ART-PRINCIPLES

The Education of the Photographic Artist	Paul Lewis Anderson	Dec., 1915
Artistic Feeling in the Snapshot	Will W. Todd	Dec., 1915
Photography as a Means of Expression	Bertrand H. Wentworth	July, 1915
Can the Camera Create?	William Findlay	May, 1915
The Consideration of the Picture on the Ground-Glass	John W. Gillies	May, 1915
Is There a Place Left for Straight Photography?	Sigismund Blumann	Jan., 1915
Pictorial Landscape-Photography. I	Paul Lewis Anderson	Sept., 1914
Pictorial Landscape-Photography. II	Paul Lewis Anderson	Oct., 1914
Pictorial Landscape-Photography. III	Paul Lewis Anderson	Nov., 1914
Pictorial Landscape-Photography. IV	Paul Lewis Anderson	Dec., 1914
Pictorial Landscape-Photography. V	Paul Lewis Anderson	Jan., 1915
Pictorial Landscape-Photography. VI	Paul Lewis Anderson	Feb., 1915
Constructive, Helpful Criticism	Sigismund Blumann	Sept., 1914
The Figure in Landscape	Henry R. Poore	Jan., 1914
Principles of Composition	Arthur W. Dow	April, 1913
Art and the Exact Sciences	Right Hon. Lord Rosedale, K.C.B.	June, 1912
Independent Criticism	William H. Blacar	Oct., 1912
Epitaphs, Pictorial Photography and the Art-Critic	Charles J. Adams	Oct., 1912
Different Kinds of Pictures	Arthur Hammond	Sept., 1912
Pictorial Surgery	William Howe Downes	Aug., 1912
On Print-Criticism	Virginia F. Clutton	Aug., 1912
A Plea for Straight Photography	Dan Dunlop	May, 1912
Admiring Bad Pictures	William Howe Downes	Dec., 1909
How the Painters Do It	F. A. Waugh	Sept., 1909
Art-Appreciation in Europe and America	Alon Bement	Dec., 1908
The Decorative Aspect of Photography	A. H. Blake, M.A.	June, 1908
Some Notes on Composition in Landscape	Horace Mummery	May, 1908
The Point of View	Esther Matson	Feb., 1908
Individuality as Shown by Different Interpretations of the Same Scene	Phil M. Riley	Nov., 1907
Perceptions of the Visual Sense	C. Baumann	Aug., 1907
Impressionism in Landscape-Photography	James C. Savery	May, 1907
Fuzziness	Horace Mummery	April, 1907

DEVELOPING

Extra Rapid Fixing-Baths	C. Welborne Piper	Nov., 1915
Pyro-Acetone Developer as a Preventive of Halation	William H. Zerbe	Sept., 1915
The Ideal Portrait-Negative	David J. Cook	June, 1914
Water for Photographic Purposes	David J. Cook	Mar., 1914
The Development of Film-Packs	E. L. C. Morse	Mar., 1914
One Developer for Plates, Films and Papers	Phil M. Riley	Mar., 1914
The Development of Outdoor-Exposures	David J. Cook	June, 1913
A Developer for Underexposed Plates	L. C. Bishop	Oct., 1912
A Standard Developer for Plates and Films	Phil M. Riley	May, 1912
Tank-Development with Rodinal	Alfred Watkins	Feb., 1912
Diamidophenol as a Developer in Tropical Countries	A. and L. Lumière and Seyewetz	July, 1911
A New Method of Tank-Development	Harold Baker	April, 1911
Time-Development for Plates and Films	Alfred Watkins	Dec., 1910
Time-Development	Gaston M. Alves	April, 1910
A Formula for Tank-Development	R. E. Crane	Mar., 1909
On the Comparative Merits of Different Developers	Malcolm D. Miller, M.D.	
I. Materials and the Criteria of Perfection		Mar., 1909
II. Developers for Negatives		April, 1909
III. Developers for Paper		May, 1909
How Far to Develop	Phil M. Riley	Dec., 1907
Pyro-Metol for Plates	Phil M. Riley	Oct., 1907
Water-Development	J. Preston	Feb., 1907
A Factorial Development-Chart	Richard Percy Hines	Jan., 1907
Development without Rocking	Rudolf Walter	Jan., 1907

AFTER-PROCESSES

Copper Bromide for the "Equalization" of Negatives	P. H. Palmer	Oct., 1915
The Sulphide Toning of P. O. P.	H. W. Winter	Aug., 1915
An Acid Toning-Process for Developing-Out Paper	George S. Hoell	Mar., 1915
Etching in Portrait-Photography	Clara Weisman	June, 1914
A Dry Method to Improve Faulty Negatives	H. A. Stover	June, 1914
Influences Affecting Sulphide Toning	N. C. Deck	Dec., 1913
Negative-Defects, their Origin and Cure	David J. Cook	Nov., 1913
Pencil-Colored Oil-Transfers	Robert Demachy	Sept., 1913
Uranium as an Intensifier and Toner	James Thomson	Aug., 1913
Pictorial Treatment by Chemical After-Manipulation of the Negative	David J. Cook	Aug., 1913
Sulphide Toning as a Remedy for Stains	James Thomson	May, 1913
Retouching and Improving Landscape-Negatives	G. T. Harris	Sept., 1912
Re-toning by Heat	A. W. H. Weston	Mar., 1912
Helping Defective Shadows	James Thomson	Jan., 1912
Practical Retouching for Amateurs	Clara Weisman	Dec., 1911
The Art of the Retoucher	Clara Weisman	Dec., 1910
Improving Negatives of Uneven Density	Phil M. Riley	Dec., 1909
Modifying Sulphur-Toned Bromide Prints	W. J. Routley	Nov., 1909
Simple Methods of Manipulating Negatives	Walter Winchester, M.D.	Oct., 1908
Contrasty Negatives and the Remedies	James Thomson	April, 1908
Some Hints on the Toning of Bromide Enlargements	George H. Scheer, M.D.	Mar., 1908
The Photo-Chemical Activity of Uranium Nitrate	George F. Parmenter, Ph. D.	Dec., 1907
Varnishing Negatives	Victor Wilson	Dec., 1907
Transparent Spots on Negatives and How to Treat Them	Madison Phillips	June, 1907

INTERIORS

Architectural Photography	Robert W. Tebbs	July, 1915
How to Prevent Halation	Philip Conklin	July, 1915
Extremes of Contrast Indoors and Out	George W. Hance	Oct., 1914
Interiors by Flashlight in the Home	David Bevan, M.D.	Feb., 1913
Artistic Interiors	E. H. Weston	Dec., 1911

(*To be continued*)

The G. Cramer Memorial Fund

THE following is the list of contributors to the G. Cramer Memorial Fund.

A star (*) indicates that there have been two contributions.

Abbott, A. E., Little Falls, N. Y.
Abel's Photographic Weekly, Cleveland, O.
Allison & Hadaway, New York City.
American Photography, Boston, Mass.
Anderson, Geo. E., Springfield, Utah.
Anderson, H. C., Pittsburgh, Pa.
Anonymous, Fayetteville, Ark.
Anschuetz, H. M., Keokuk, Ia.
*Armbruster, Henry, Mt. Vernon, N. Y.
Armstrong, R. B., Roachdale, Ind.
Baker Art Galleries, Columbus, O.
Baldwin Studio, Buffalo, N. Y.
Ball, H. Lee, Pensacola, Fla.
Barstow, Laura A., Burlington, Vt.
Bassett, W. A., Perry, N. Y.
*Beach, Howard D., Buffalo, N. Y.
Beamer, Frank H., Buffalo, N. Y.
Bell, Curtis, New York City.
Bennett, Mrs. H. H., Kilbourne, Wis.
Bertrand, J. T., St. Louis, Mo.
Biddle, W. A., London, O.
Biglow, L. G., Ronan, Mont.
Billings, E. T., Racine, Wis.
Billington, J. A., Lakeville, Minn.
Bish, A. A., Chippewa Falls, Wis.
Bliss, Harry A., Buffalo, N. Y.
Blodgett, Winifred, Blanford, Mass.
Boerger, J. C., Topeka, Kas.
Bowler, M. J., Conway, N. H.
Bowles, Mrs. E. A., Wyandotte, Mich.
Boyette, F., New York City.
Brabill, B. E., Fayetteville, Ark.
Brandell, Wm. H., Buffalo, N. Y.
Bretzmann, C. F., Indianapolis, Ind.
Brooks, A. J., LeRoy, N. Y.
Brown, Geo., Pittsburgh, Pa.
Brush Studio, St. Paul, Minn.
Bryce, I. N., White Plains, N. Y.
Bulletin of Photography, Philadelphia.
Bunker, Ada, Butler, Ind.
Burkhart, Clay, Saymour, Mo.
Bushong, J. Chester, Worcester, Mass.
Butler, E. V., Republic, Mich.
Camera, The, Philadelphia.
Camp Art Co., Buffalo, N. Y.
Cargill, C. E., Johnson City, Tenn.
Cash, New York City.
Chamberlain, B. H., Buffalo, N. Y.
Clark, Mrs. Anna Harris, Pittsburgh, Pa.
Clark, Frank Scott, Detroit, Mich.
Core, E. B., Yonkers, N. Y.
Core, W. F., Ft. Thomas, Ky.
Crovery, M. M., Rector, Ark.
Damsteegt, A., Brandon, Wis.
Diehl, A. H., Sewickley, Pa.
Doleman, B. O., Buffalo, N. Y.
Donnel Studio, Eureka, Cal.
Donnelly Studio, New Haven, Conn.
Donner, L. W., Green Bay, Wis.
Douglas, William, Snohomish, Wash.
Dozer, L. A., Bucyrus, O.
Durst Bros., Deer Park, Wash.
Eddowes Co., New York City.
Eddy, E. C., Southern Pines, N. C.
Edmondson, Geo. M., Cleveland, O.
Everitt, E. F., Redlands, Cal.
Falk, B. J., New York City.
Farber & Son, J. S. S., Norfolk, Va.
Feldman, Fred J., El Paso, Tex.
Free, E. A., Davenport, Ia.
Frey, Carl K., Utica, N. Y.
Fritsch, H. F., Owatonna, Minn.
Frost, Fred J., Toledo, O.
Genelli Studio, Sioux City, Ia.
Gessford, J. G., New York City.
Ginther, J. J., Buffalo, N. Y.
Goebel, R., St. Charles, Mo.
Goerz, C. P., American Optical Co., New York.
Golling, B. C., St. Paul, Minn.
Gowdy, Georgie O., New Berne, N. C.
Guttenstein, B. C., Milwaukee, Wis.
Haas & Haas, St. Louis, Mo.
Hale, J. E., Geneva, N. Y.
Hall Studio, New York City.
Hamley, A. F., Maquoketa, Ia.
Hammer, Fred, Hammer Dry Plate Co.
Hansen, Olaf, Iron River, Wis.
Hare, Geo. T., Buffalo, N. Y.
Harden, Homer T., Wichita, Kas.
*Harris, G. W., Washington, D. C.
Harwood, E. H., Appleton, Wis.
Hayes, J. W., St. Louis, Mo.
Haynes, T. J., St. Paul, Minn.
Henry, O. C., Pittsburgh, Pa.
Holladay Studio, Durham, N. C.
Hopland, A. N., Clarkfield, Minn.
Hoyt, Dudley, New York City.
Hubert, Celia A., Buffalo, N. Y.
Imes, Lewis E., Lansing, Mich.
Immke, H. W., Princeton, Ill.
Isaacs, Isaac, Eau Claire, Wis.
Jamieson, Katherine, Pittsburgh, Pa.
*Johnson, Belle, Monroe City, Mo.
Johns, A. R., Paris, Ky.
Kaiser, A., Dinuba, Cal.
Kakkonen, C. A., Hancock, Mich.
Kazaiyan Studio, New York City.
Kikuchi Studio, New York City.
Kikuchi, Toyo, New York City.
Knafft & Brakebill, Knoxville, Tenn.
Koehne, W. L., Chicago, Ill.
Kramer, George, Buffalo, N. Y.
LaMarche, B., Racine, Wis.
Leavitt, Rene, Chalco, Neb.
Lee, W. M., Oconto, Wis.
Leet, Frank F., Jamestown, N. Y.
Lewis, C. L., Toledo, O.
Lively, W. S., McMinnville, Tenn.
Loeb, S. S., Pittsburgh, Pa.
Lutes, F. S., Ft. Scott, Kas.
*MacDonald, Pirie, New York City.
Mallory, R. L., Bellefonte, Pa.
Mandeville, W. G., Lowville, N. Y.
Mahn, Frank C., Clintonville, Wis.
Maresh, J. J., Caldwell, Tex.
Martin, E. M., Logan, O.
Markel, Irving, Buffalo, N. Y.
Mason, Geo. E., Buffalo, N. Y.
Maugans, A., DeGraff, O.
Maurer, J. M., Galveston, Tex.
Medlar, Frank W., Spencer, Ia.
Medlar, Herbert B., Woodstock, Ill.
Miller, Emmett L., Chappaqua, N. Y.
Mock, J. E., Rochester, N. Y.
Montgomery, H., Hartford, Wis.
Murphy, Will R., Newton, Kas.
Mullett Bros., Kansas City, Mo.
Munger, Dan C., Oconomowoc, Wis.

XUM

Newcomb Studio, Middlefield, O.
Nickee, Mrs. E. H., Pittsburgh, Pa.
Noble, F. S., Eastman Kodak Co.
Nuckles, W. A., Paris, Ill.
Nussbaumer, J. G., Buffalo, N. Y.
O'Brien, D. D., Waukesha, Wis.
Olszruski, Leon, Buffalo, N. Y.
Orso, F. J., Gillespie, Ill.
Pach Bros., New York City.
Pancoast, Chas. R., Philadelphia.
Phillips, Ryland W., Philadelphia.
PHOTO-ERA, Boston, Mass.
Photo Art Shop, St. Paul, Minn.
*Photographic Journal of America, New York.
Pictorial News, New York City.
Pierce, H. H., Boston, Mass.
Plecker & Maury, Lynchburg, Va.
Pohle, Frederick W., Buffalo, N. Y.
Poisson, E. J., Biddeford, Me.
Popular Photography, Boston, Mass.
Post, F. E., Denver, Colo.
Prince, L. M., Cincinnati, O.
Price, Sara F. T., Mt. Airy, Philadelphia.
Pryor, W. A., La Crosse, Wis.
Ragsdale Studio, San Angelo, Tex.
Reese, B. F., Morristown, Tenn.
Reineke, Miss, Kansas City, Mo.
Richards, A. J., Medina, N. Y.
Robinson, Miss Dona, Heavener, Okla.
Rockwood, Jr., New York City.
Rosch, A. T., New Rochelle, N. Y.
Rosch, J. Edw., St. Louis, Mo.
Rosch, M. B., White Plains, N. Y.
Rose, H. B., Live Oak, Fla.
Schaefer, H. B., Altoona, Pa.
Scheide, C. W., Elyria, O.
Schiller & Co., W., St. Louis, Mo.
Schlang, F., Ft. Wayne, Ind.
Schlueter, Frank J., Houston, Tex.
Schriever, J. B., Scranton, Pa.
Schroeder, Romeo, Baraboo, Wis.
Scott, B. S., Pittsburgh, Pa.
Sedden, R. C., Pittsburgh.
Selby, Misses, New York City.
Sipprell, F. J., Buffalo, N. Y.
Smith, Chas. O., Buffalo, N. Y.
Smith, Geo. D., Oak Harbor, O.
Smith Portrait Co., Philadelphia.
Spencer, Mrs. A., Beatty, N. Y.
Spieth, Otto, Jacksonville, Fla.
Stage, J. H., Buffalo, N. Y.
Stein, S. L., Milwaukee, Wis.
Stierle Bros., Marshfield, Wis.
Stoltz, C. H. H., St. Paul, Minn.
Stone, W. D., Tahlequah, Okla.
*Strauss, J. C., St. Louis, Mo.
Strauss-Peyton Studio, Kansas City, Mo.
Tamlyn, G. W., Mason, Mich.
Thayer, E. Q., Noblesville, Ind.
Thompson, D. P., Kansas City, Mo.
Thuss, A. J., Nashville, Tenn.
Tomlinson Studio, Hannibal, Mo.
Titus & Burnell, Buffalo, N. Y.
Tobias, J. H., Lancaster, O.
Toloff, Jos. D., Evanston, Ill.
Toloff, Lester, Pittsburgh, Pa.
Topliff, Geo., Ansco Co.
Tonndorf, Carl, Milwaukee, Wis.
Towles, W. H., Washington, D. C.
Townsend, Alva C., Lincoln, Neb.
Turk, Mrs. Otto, Jamestown, N. Dak.
Underhill, Irving, New York City.
Underwood & Underwood, New York City.
Van Buren, C. B., Ithaca, N. Y.
Van Fleet, Margaret, Detroit, Mich.
Yachett Studio, St. Mary's, O.
Walinger, Chas., Chicago, Ill.
Wardner, N. S., Plainfield, N. J.
Watkins, E. M., Chicago, Ill.
Watton, H. C., Oklahoma City, Okla.
Weeks, Lucia, Mansfield, O.
Weigel, Miss Mary, Dyerville, Ia.
Westberg, L. E., Duluth, Minn.
Wiegand, Daniel F., Eden, Erie Co., N. Y.
Wint, R. W., Allentown, Pa.
Young, Sol., New York City.
Zahner, M. H., Niagara Falls, N. Y.
Zimmerman, Chas., Buffalo, N. Y.
Zimmerman & Lelende, St. Paul, Minn.

The National Portfolio

To acquaint the Nation with the beauty and extent of its national parks, Secretary Lane, of the Department of the Interior, has caused to be issued a portfolio of nine pamphlets, each devoted to a presentation and description of the picturesque scenery of a national park. The illustrations, superbly executed halftones, are from original photographs by the best craftsmen in the country, viz., J. E. Haynes, Edward S. Curtis, George R. King, Herbert L. Gleason, Fred H. Kiser, H. C. Tibbitts, J. T. Boysen, A. C. Pillsbury, Lindley Eddy, W. L. Huber, H. T. Cowling, Enos A. Mills, John K. Sherman, Arthur Chapman, J. L. Nussbaum, Curtis & Miller, Fred Harvey and S. N. Leek.

That the United States government furnishes to the people playgrounds which are without any rivals in the world; that just as the cities are seeing the wisdom and necessity to provide open spaces for the children, so with a very large view the Nation has been saving from its domain the rarest places of grandeur and beauty for the enjoyment of the world, is a fact that has been discovered by tourists only this year. Having an incentive in the expositions on the Pacific coast, and Europe being closed, thousands have for the first time crossed the continent and seen one or more of the national parks. That such mountains and glaciers, lakes and canyons, forests and waterfalls, were to be found in this country, was a revelation to many who had heard but had not believed. It would appear from the experience of the past year that the real awakening as to the value of these parks has been realized at last, and that those who have hitherto found themselves enticed by the beauty of the Alps and the Rhine may find equal if not more stimulating satisfaction in the mountains, rivers and valleys which this government has set apart for them and for all others. The nine profusely illustrated pamphlets are devoted to the following subjects:

Yellowstone National Park	31 views
Yosemite National Park	28 views
Sequoia National Park	27 views
Mount Rainier National Park	24 views
Crater Lake National Park	23 views
Mesa Verde National Park	27 views
Glacier National Park	25 views
Rocky Mountain National Park	29 views
Grand Canyon National Monument	24 views

Cause Enough

Camerist, to his companion — "I noticed that your friend, Miss Perkins, whom we just passed, gave you the frozen face. Have you offended her in any way?"

"No, indeed! I only made a picture of her."

XUM

LONDON LETTER

One of the most interesting photographic exhibitions ever held in London is that of the Official Records of the Photographic Section of the French Army. It is being held at the Royal Georgian Galleries at Messrs. Waring and Gillow's, Oxford Street. There are over five hundred photographs on view, mostly bromide enlargements. They are grouped under such headings as "Verdun," "The Somme," "In Belgium," etc.; but alas! the catalog was not compiled at the same time when the pictures were hung, and it causes some maddening dodging about. It is interesting reading, however, and has some lengthy descriptions at the beginning, though it grows very laconic towards the end. It is very communicative on the first page, and No. 6 is a good example. We read "Garden in the Department of the Oise: Artillery Encampment. The ease with which the men of France, little practised in sports and open-air life, have adapted themselves to the long marches and exposure, should be every one's admiration. Without preliminary training other than their military service, often many years behind them, they show more staying-power than any of their allies or enemies." None but the French could have done the photographs, nor any one but a Frenchman have written this pathetic little description.

Though many of these photographs are dramatic and vivid, they portray no horrors. We see a trench full of dead Germans; but it is not so gruesome as it sounds, and a wounded man from the Verdun fight being carried to a dressing-station is only a pitiful sight.

We are not shown so much the ghastliness of war as the effort France is making. Ruin and devastation on the one side, and on the other the work of reconstructing, organizing and healing. Naturally, the fighting-pictures are the most interesting, but it is certainly impressive to see the ammunition-making, the steel-founderies at St. Etienne, the French headquarters, military steel-foundries working at "120" shells, etc.

The most tragic and the most beautiful were the color-plates — taken, evidently, by some one with an imagination and a love of beauty. They are mostly gems of architecture, now in ruins, and the photographer's delicate rendering of these scenes made one inclined to weep. The catalog contents itself, here, with extreme brevity. For instance, "Vienne-le-Château — The Ruins;" "Arras — The Cathedral," and "Fey-en-Haye — Church" are deemed sufficient, for it is wise enough to know that the color-plates are making an appeal straight to our hearts. It is only fortunate for us that the other prints are not in color, or we could not have born such realism when it is to do with humanity instead of architecture.

We have just come from the Little Gallery in Long Acre, and feel that we have enjoyed some much-needed foreign travel. The exhibition is one of Colonial work, and there is not an English-looking print in the show. We are all getting very tired of staying at home, especially in August, and it was a refreshing thing to get these glimpses of other lands. The whole atmosphere is different: Mr. Cazenaux' "Spring-Time" could only be spring-time in South Wales, and Mr. Gilham's "Giant Gums" are typically Australian. "By the Jungle-Pool" we are in the heart of Africa, and then we are whirled off to China to see "The Feast of Lanterns." This is a curious effect, as the lanterns are a dense white, cutting, as it were, right into the print, and the contrast of this flash of light against the rest of the picture, which is low in tone, is startlingly bizarre. This does not surprise us, because we are having a foreign change, when any deviation from the normal is welcome! In "The Stock Route" we are back again in Australia, and see an immense flock of sheep being driven along a dusty road. From this blinding and glaring scene we are spirited off to the quiet and restful "Garden of Allah," a stately Indian Temple by Mr. Gascoigne Lynde, of Madras. We are shown little, dark-skinned children, a Zulu boy with a head-dress of horns, a Boer girl with a gun and a still-life of fruit, but even that is strange, for over here we know nothing of "Loquats," and that is what Mr. E. N. Poole, of New South Wales, calls his picture.

The photography of medals, almost an art in itself, will soon have to be taken in hand by British photographers, for there is no doubt that the end of the war will see a great variety of numismatic memorials. Already, the Civic Arts Association has an exhibition at the Royal Institute of British Architects (No. 9 Conduit Street). This is not a show of finished work; but rather a summary of the poems in stone or metal that are to be. There is no doubt that the exhibition will stimulate designers. If it does this, one of its chief objects will be attained. An anonymous collector has presented to the British Museum some specimens of the medals which have been struck in Germany to commemorate the war. These are not to be shown to the public at present, although there are plaster-casts of thirteen of them on view at the Victoria and Albert Museum, South Kensington. They throw a curious light on the attitude of mind of the German public, not to mention the German artists. The medal commemorating the sinking of the *Lusitania*, which is amongst the replicas, at South Kensington, is a well-nigh incredible production in spirit. But we are straying from photography, and need only remark that all these works of art will have to be carefully photographed and circulated all over this country, if only to impress on the people our enemy's attitude of mind.

Photography looms larger than ever this month in relation to the war. Even the British Cabinet Ministers are to be kinematographed! Such an event would have been unbelievable even a year ago; but war is the destroyer not only of armies but of conventions. Never was there a stronger tradition than the secrecy of the doings of the Cabinet. Even their methods of conducting business have been jealously guarded. Now a long-table conference is to be disclosed to the public gaze, and by means of the "movies." When the film is completed, it will be sent to every theater in the country and, eventually, all over the world. History-making and charity, which will benefit largely by the scheme, are the chief causes that have made this revolution possible, and there is no doubt that some such record of the cabinet of the war-period will possess permanent historical interest and value.

We are beginning to hear tales of the adventures of the men who are taking motion-pictures actually at the front. For several months one man has been portraying the struggle in Belgium, at Ypres and Neuve Chapelle. One of the "trophies" brought back was his service-cap, with two German bullet-holes through it; and a tripod that had been smashed by shrapnel was made to continue its work with the aid of some stout string. When, as Sir Douglas Haig's dispatch announced, "We attacked at dawn," this operator was a few yards behind the troops standing with fixed bayonets ready for the word to advance, and secured a picture of the leap from the trenches that will be ever-memorable.

Besides the kinematograph-work, the news by photographic pictures from the front has lately been much

XUM

improved. Censors and all officials seem to have become more lenient both to the press and the photographers, and we get much better information. The Royal Engineers devote a good deal of time to photography, obviously for military purposes. But some of the results that do not disclose professional secrets have been allowed publication. Mr. Brooks, who was with the troops at Gallipoli, is now official British photographer at the front in France. Of course, all photographs have to pass the censor before they can be given to the world; but they score over despatches, which are killed by the official blue pencil, being generally of momentary interest only; whereas the temporarily suppressed pictures may, and probably will, come to life again when the war is over.

A Photo-Era Reference Library

UNDER this designation we refer to the list of selected issues of PHOTO-ERA, published during the last eight years, and which list, under the various subject-headings, was printed in PHOTO-ERA for June, July, August and October, and will be concluded in the November issue, 1916.

The important articles contained in these back numbers are prized, particularly, by new readers of PHOTO-ERA, who have no back files and cannot conveniently consult them at their public libraries. Timely articles on almost any practical subject in photography may be found in these back numbers, which are offered at 25 cents each, postpaid, so long as the supply lasts.

Some of our friends look upon this reference library as a veritable encyclopedia, and we are glad to state that amateurs, generally, are availing themselves of this opportunity to obtain valuable and trustworthy information on almost any photographic topic likely to come up now or in the future. This interest is likely to continue for a long time to come; and workers who have not yet needed advice on some special subject will find it to their advantage to preserve the numbers of PHOTO-ERA beginning with June, 1916, which lists these important articles, together with the names of the authors and the dates of their publication.

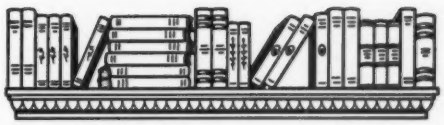
Brooklyn Institute of Arts and Sciences

RECOGNIZING the broadening influences of artistic photography in portraiture, magazine-illustration and as a medium of art-expression, the Department of Photography announces a special autumn- and winter-course. It is open to beginners as well as advanced workers, and will consist of twelve sessions, the first four of which will be given by Karl Struss on October 5 and 19 and November 2 and 16. The second four sessions will be given by Paul Lewis Anderson in December and January, and the last four by Clarence H. White in February and March, on alternate Thursday evenings. The price for members of the Institute is $10, and for all other persons $14. Write for prospectus, giving full particulars, to the Brooklyn Institute of Arts and Sciences, Academy of Music, Brooklyn, N. Y.

The Department also announces that it has again secured the services of Mr. William H. Zerbe to conduct a course in photography, beginning October 3, with a class for beginners and another for advanced workers. Students who have taken the course in previous years are enthusiastic over Mr. Zerbe's painstaking methods of instruction. A prospectus giving full particulars may be had upon application.

Misunderstanding

"MY father uses a tripod when he photographs."
"Has he a Kodak?"
"No; the palsy."—*Fliegende Blaetter.*



BOOK-REVIEWS

Books reviewed in this magazine, or any others our readers may desire, will be furnished by us at the lowest market-prices. Send for our list of approved books.

THE GRAPHIC ARTS AND CRAFTS YEAR-BOOK, 1913-14, Volume VI. American Annual Reviews of the Printing and Allied Industries. Walter L. Tobey, editor. Quarto, 1,022 pages; cloth-bound with leather back. Sumptuously illustrated. Price, $5.00, express paid. Hamilton, Ohio: Graphic Arts Press.

This, the only American annual devoted to a survey of the process and printing-trades, is ever welcome, and never fails to elicit unstinted admiration. Its many specimens of the most advanced styles of illustration in monochrome and color, of the newest type-faces and typographical schemes and the many contributed technical and review articles by our foremost authorities speak eloquently of the expert knowledge and discriminating taste of the editor, Mr. Walter L. Tobey. Every craftsman in every branch of the printing and allied trades will be benefited by perusal and study of this bulky volume; likewise the commercial photographer who prepares prints for engraver's use.

The ten sections comprising the complete volume have been edited and compiled by as many men, each an authority in his respective line, and include Walter L. Tobey, A. H. McQuilkin, Henry Lewis Johnson, Marquis Regan, Edward Epstean, A. V. FitzGerald, W. S. Carroll, Charles D. Jacobs, E. Woodman Palmer and Edward Passano. In most of these departments will be found signed articles by leading printers and engravers devoted to art and technical matters which will prove of the utmost practical value to others similarly engaged. The illustrations represent the work of many establishments and the presswork from fully as many print-shops. In each instance full credit is given, with an appended statement of the paper, inks and types used. Virtually every sort of reproduction and mode of printing is represented.

California Camera Club

THIS club will hold its Fifth Annual Photographic Salon, the first since the great fire of 1906, in the galleries of the Palace Hotel, San Francisco, November 25 to December 2, inclusive. It is the aim of the Salon to exhibit only such pictures as measure up to the highest standards of artistic expression and show mastery in execution. All work submitted to the jury of selection, composed of leading artists, will be judged according to these standards. All correspondence should be addressed to the Secretary, California Camera Club, 833 Market Street, San Francisco, of whom full particulars and entry forms may be obtained.

Prints must be mounted but not framed. The maximum size for mounts is 20 x 25 inches. All pictures, accompanied by an entry-form properly filled out, together with an entry and packing-fee of seventy-five cents, must be sent by parcel-post or express prepaid, to arrive before November 4. Arrangements will be made for the sale of pictures, and a commission of fifteen percent will be charged on all sales. Each print must bear on the back the name and address of the artist, the number and title of the picture and the price.

XUM

WITH THE TRADE

A New Edison Developer

ALTHOUGH the announcement of this newest substitute for Metol reached us too late to test the salt itself, we have no hesitancy in recommending anything bearing the name of Edison, knowing that his reputation is too valuable an asset to be endangered by association with inferior products. The same is true of the firm-name, G. Gennert, which alone would be sufficient guaranty of the merit of Paramidophenol Hydrochloric-Edison. This new agent has the advantage of requiring no special formula, it being substituted for Metol in any favorite formula with gratifying results.

The Home of the Imp Flashlite Gun

WITHOUT doing a penny's worth of war-business the plant of the Imperial Brass Manufacturing Co., Chicago, manufacturers of the Imp Flashlite Gun and other brass-specialties, has been running night and day for many months past. A new building is now to be erected on an adjoining site, which will double the present floor-space and give a total of 150,000 square feet. The growth of this firm is the direct result of the high quality of its products, and PHOTO-ERA readers will make no mistake in placing implicit confidence in them. The Imp Gun costs only $1.75 complete, and a circular will be sent gladly upon application.

Diamidophenol for Gaslight Papers

BREWSTER & ROBBINS, manufacturers of Diamidophenol in America, recommend the following formula for pure black and white tones on gaslight papers.

STOCK-SOLUTION

Water	16 ounces
Sodium bisulphite	192 grains
Sodium sulphite, anhydrous	2 ounces

DEVELOPER

Stock-Solution	2 ounces
Water to	10 ounces
Diamidophenol	25 grains
Potassium bromide, sat. sol.	3 drops

A Moral from King Cyrus

MANY years ago, the great city of Babylon was attacked by a live wire known as Cyrus, King of Persia. The Prince of Babylon retired behind the great walls of his city and thought he was perfectly safe for some days to come.

The city was built on both sides of the Tigris River, which flowed under a great arch in the walls and through the heart of the city. The mighty river had always been as great a protection as the walls themselves.

Such a condition would have worried most men, and they would have been content to sit down with their army and wait for the city to starve. But not so with Cyrus. He was progressive.

So Cyrus took most of his army up the river out of sight and set them to digging great trenches out in the desert and leading toward the city. Most of the generals thought he was crazy. But Cyrus stood ace high and they had to obey him.

About the time they had brought the great ditches nearly up to the river, Cyrus heard that there was to be a great feast in Babylon in the palace of old Belshazzar. It was a wonderful banquet. All the leaders of the army were there, and reports have it that most of them were somewhat under the weather, as it were. Everybody forgot that Cyrus was outside the city with an army of Persians.

At the height of the feast, Cyrus caused the great ditches to be opened into the river, and the water flowed out into the desert instead of through the city of Babylon. Cyrus and his army marched into the city over the ground where the river had flowed before. Thus fell Babylon.

There is a moral in this incident for the business-men of to-day. The merchant or manufacturer who fails to take advantage of new and improved methods, and insists that his father's methods are good enough for him, is like the people of Babylon, and must eventually give way to the live wire who follows the example of Cyrus and breaks away from the beaten path.

Many modern business-men, when asked why they don't advertise, reply: "Oh, I don't have to advertise. My father never advertised, and look at the big business he built up."

The deplorable fact about nine out of ten such men is that their business, prosperous though it may be, is standing on the edge of failure. It may never fall over the edge, to be sure; but the risk is hardly worth the candle. Far better and far safer for them to fall in line with progress, and, with the force of advertising, ensure their business permanently against all invasion.

Critique.

Cramer Plates and Filters

JUST as the manufacturer of every plate and film knows what developer is best suited to bring out its excellences to the full, so he knows best how deep and what color to make the filter for orthochromatic work so necessary to the correct rendering of autumn-landscapes. Cramer plates and filters have been carefully adjusted in the Cramer Research Laboratory under the direction of R. James Wallace, and the average worker does well to use them jointly.

Wellington Anti-Screen Plates

THIS justly popular brand of plates has become a fixture on the American market, for its worth has been proved in actual practice. Those workers who wish to avoid the trouble and extra exposure entailed by the use of a color-filter in autumn-photography will be glad to know that despite the war Ralph Harris & Co., the American agent, has a goodly stock of Anti-Screen plates and can take care of all reasonable orders.

Halldorson Home-Portrait Flashlamp

Now that shorter days are bringing artificial light more frequently into use, home-portrait workers who desire a particularly compact and efficient lamp suitable for single figures or groups up to twenty persons will welcome the Halldorson outfit described in an advertisement on another page. It seems to meet a need not filled by any other device on the market.